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THE CLINICAL USE OF ANESTHETIC AGENTS AND METHODS

CHAIRMAN'S ADDRESS

JOHN S. LUNDY, M.D.
ROCHESTER, MINN.

It has been suggested that I discuss the extent to which the inexperienced person may be justified in using certain anesthetic agents, in comparison with persons who are experienced in the use of these agents.

The factor that should receive first consideration in the clinical use of an anesthetic agent is safety both at the time of administration and subsequently. It seems best to discuss each agent separately and briefly and to stress general principles that seem to me controversial only in isolated instances.

Derivatives of Barbituric Acid.—In certain emergency cases any practicing physician is justified in using the barbiturates in large doses: for example, in cases of tetanus, eclampsia of pregnancy, or convulsions caused by meningitis or by strychnine poisoning. A derivative of barbituric acid is most effective when given intravenously. The Council on Pharmacy and Chemistry of the American Medical Association has issued two valuable reports on the intravenous use of barbital compounds.[1] When a barbiturate is given intravenously, the rate of injection should be slow enough so that marked depression of respiration does not occur; since individuals vary, no rule can be given other than that the respiration must be watched. Perhaps as important as the rate of injection is the initial assurance that the stomach is empty and, thereafter, maintenance of a good airway. A sterile, soluble salt should be used for intravenous administration. If only the insoluble acid is available, it can be given by mouth, in tablets or capsules, if the patient can swallow; if he cannot swallow, it can be given by rectum. The general practitioner advisedly gives the barbiturates by mouth, in small doses, as sedatives. It is now apparent that these drugs are habit forming to certain types of individuals and I feel that if the patient becomes addicted to the use of a barbiturate that patient may possibly be emotionally unstable and constitutionally inferior, with psychopathic tendencies. As preoperative or postoperative medication, these drugs are valuable and are safely used in small doses in the majority of cases. Intravenous injection of the barbiturates to produce surgical anesthesia should be confined to minor operations of short duration, and administration should be by experienced persons. These injunctions should hold until it has been definitely shown that the drug has a wide margin of safety and that fatalities are unlikely to occur from moderate overdosage.[2] The latter requirement for safety, in all probability, never can be met, and so I advise against the giving of the barbiturates intravenously by those inexperienced in their administration whenever another anesthetic agent can be used instead. If, for some reason, it is the only anesthetic available, or if no other one can be used, the administrator must see to it that the patency of the airway is maintained.

Tribrom-Ethanol in Amylene Hydrate (Avertin in Amylene Hydrate).—This substance with the long names is a substitute for ether in olive oil when the rectal or colonic method of producing anesthesia is to be used. Rectal administration of any anesthetic agent is not ideal, for absorption varies with individuals. The physiologic action of tribrom-ethanol in amylene hydrate is similar to that of chloral hydrate and it may be used by the inexperienced person, provided the dose is not larger than that which will produce basal anesthesia; provided use of the drug is avoided if the patient has an extensive pulmonary disease, with cavitation, such as tuberculosis and bronchiectasis; provided it is not employed in the presence of advanced disease of the liver, pancreas, or kidneys, and provided the user follows carefully the directions for preparing the solution that accompany the drug. Preliminary medication not to exceed the average dose may be used to advantage in connection with this drug, and a patent airway must be maintained at all times. The experienced will be able to use tribrom-ethanol alcohol in amylene hydrate in larger doses and in a greater variety of cases than the inexperienced. Its use is being presented at this meeting by Drs. Shipway and Wood.

Cyclopropane.—Cyclopropane (C_3H_6) is the anesthetic gas most recently made available, and it has been introduced by Waters,[3] wisely, in a conservative manner. The time has not yet come when it can be safely used as a routine by the inexperienced person. Even the occasional user and the experienced anesthetist will find that the agent should be administered carefully and its effect observed constantly. This is especially true when Guedel's[4] apneic technic, or any approach to it, is attempted. Although anesthesia may be induced quickly with this agent, it is not advisable to hurry the induction of anesthesia with it. The inflammability of the agent is a definite hazard. Its effect on the heart has not yet been definitely established; however, some experiments are being reported and may lead to further clinical investigation. It must be obvious, therefore,

From the Section on Anesthesia, the Mayo Clinic.

Read before the Section on Miscellaneous Topics, Session on Anesthesia, at the Eighty-Sixth Annual Session of the American Medical Association, Atlantic City, N. J., June 12, 1935.

1. Council on Pharmacy and Chemistry: Intravenous Use of Barbital Compounds, J. A. M. A. **97:** 1886-1890 (Dec. 19) 1931, **101:** 208-209 (July 15) 1933.

2. Lundy, J. S., and Tovell, R. M.: Annual Report for 1934 of the Section on Anesthesia, Including Data on Blood Transfusion, Proc. Staff Meet., Mayo Clin. **10:** 257-272 (April 24) 1935.

3. Waters, R. M., and Schmidt, E. R.: Cyclopropane Anesthesia, J. A. M. A. **103:** 975-983 (Sept. 29) 1934.

4. Guedel, A. E.: Personal communication to the author.

that as yet more than usual caution should be exercised in the use of this agent. However, for either the experienced or the inexperienced person, I think that this agent would be safer from the standpoint of purity and fire hazard than acetylene, for the use of which I think there is no longer a justifiable reason in this country.

Ethylene. — Ethylene (C_2H_4) may be used by the relatively inexperienced individual with relative safety if fire hazards and anoxemia are carefully avoided.

Nitrous Oxide.—Nitrous oxide (N_2O) should not be used by those who are totally inexperienced. It may be employed with relative safety by the occasional user and it is used advantageously by the experienced person.

Diethyl Ether.—Diethyl ether $(C_2H_5)_2O$ is one of the safest agents that the inexperienced can use and yet produce relatively satisfactory anesthesia. It is the agent most frequently resorted to by even the experienced when surgical anesthesia with other agents is unsatisfactory. The method of its administration is simplest when the drop method is used, and for the inexperienced this method is the safest. The experienced person seldom resorts to the drop method but often adds ether to the gases. Use of anesthesia produced by oil and ether, given rectally, should be limited to the experienced anesthetist, but analgesia or basal anesthesia may be used with safety by the inexperienced, especially in anesthetization of obstetric patients.

Divinyl Ether. — Divinyl ether $(C_2H_3)_2O$ should not be used by the inexperienced person as yet. The experienced will probably use it only occasionally until it has been definitely established that it has advantages over ethyl ether. Other ethers need not be considered here because they are not readily available.

Chloroform. — Chloroform ($CHCl_3$) in anesthetic doses should be administered only by one experienced in its use and by one who recognizes its dangers and contraindications. Its use as an analgesic in very small quantities is widespread and in obstetrics it seems to be generally useful and practical. One who uses this agent should be cautious not to administer it in concentrated form; that is, without admixture with sufficient air, and when possible some other agent is to be preferred.

Ethyl Chloride.—Ethyl chloride (CH_3CH_2Cl) may be used with considerable safety for freezing areas that are to be incised, and its administration for local anesthesia requires almost no experience. However, as a general anesthetic agent its use should be limited to the experienced user. The occasional user may use it with relative safety in very small amounts at the beginning of induction of anesthesia, to be followed by ether. In any event, when it is used as a general anesthetic the open drop method should be employed in preference to spraying it on the mask. Only the experienced should use the closed method in administering ethyl chloride.

Regional Anesthesia.—This is so valuable in the hands of those who are experienced in its use that I think the inexperienced person should be encouraged to use it in suitable cases provided he will bear in mind that one should aspirate before injecting procaine, to avoid intravenous injection; that procaine is the safest drug to use for this purpose; that procaine rarely should be injected in concentration greater than 1 per cent [5] unless the amount to be injected is very small as, for example, for dental block, and that the rate of injection should be relatively slow, as a further precaution against untoward reactions attributable to intravenous injection. A further protection against the convulsive effect of procaine is given by administration to the patient of small quantities of a barbiturate before the injection is made. Oral administration of a barbiturate, from thirty to forty minutes beforehand, is recommended.

Local Anesthesia.—Local, or infiltration, anesthesia, with the use of dilute solutions of procaine, is the safest method and agent with which to produce anesthesia, and I think it should be used by the inexperienced as well as by those who are experienced. It should be borne in mind however that, when epinephrine is added to the solution, its proportion should be such that its dilution will be high, say 1: 250,000 or even higher. Further, any one who uses a local anesthetic agent should make certain that the drug supplied is the drug desired and that it has been properly prepared and is of the proper concentration. A sharp needle should be used, and the least amount of trauma should be produced by minimizing the number of times the needle passes through the tissues.

Spinal Anesthesia.—This is a method that depends for its success on the judgment of the person administering it, and it should not be used by the inexperienced. The occasional user should limit the dose to that which is considered safe and he should avoid the method if patients are markedly debilitated; that is, if recently they have lost much weight, if their hemoglobin is of very low concentration, if they have had recent severe hemorrhage, or if marked hemorrhage may occur during the operation; the method is not safe, either, in the presence of marked dehydration and inanition. In using spinal anesthesia, it is often combined with gas anesthesia, but combination of spinal anesthesia with drop ether anesthesia should be avoided if possible.

Mixtures.—Mixtures of anesthetics such as alcohol, chloroform and ether, or alcohol, chloroform and ethyl chloride are, I think, as dangerous as their most dangerous constituents, and at present I think that use of mixtures should be avoided, especially by the inexperienced.

Morphine Sulphate.—Morphine is injected subcutaneously with relative safety. Its use intravenously probably should be limited, but occasionally it is advantageously given intravenously, especially in the presence of very severe pain or in an emergency case when a quick effect is necessary. If ether is to be administered rectally in oil, morphine is a good drug to use in order to slow elimination of the ether from the lungs. Morphine is well omitted as preliminary medication if ether is to be given by the open drop method, not because most patients will do poorly when both are used but because, in a few cases, the combined effect will depress the respiratory center prior to the appearance of relaxation; when relaxation is important and cannot be obtained, the operation may be materially interfered with. One of the barbiturates can well replace morphine if ether is to be administered by the open drop method.

Magnesium Sulphate.—The use of magnesium sulphate ($MgSO_4$) should, I think, be limited to the experienced person because, if it is given superficially rather than intramuscularly, an abscess may develop. There must be no question of its sterility and only prepara-

5. Mayer, Emil: The Toxic Effects Following the Use of Local Anesthetics: An Analysis of the Reports of Forty-Three Deaths Submitted to the Committee for the Study of Toxic Effects of Local Anesthetics of the American Medical Association, and the Recommendations of the Committee, J. A. M. A. **82**: 876-885 (March 15) 1924.

tions of it that are put up in ampules should be used. Its advantages are not sufficient to justify its use in the hands of an inexperienced person.

Idiosyncrasy.—When a patient advises against the use of a certain drug or says that he has an idiosyncrasy to any anesthetic agent, local or general, this warning should not be ignored and, if possible, use of the drug should be avoided. In the event that it must be used, tests should be carried out, only the smallest quantity of the agent being used, to determine, if possible, whether the patient is hypersensitive to its effect. This is probably best carried out by the patch test, which is done by applying a very small amount of the agent on an applicator and holding it against the skin for a specified time, together with a control.

SUMMARY

There are three types of persons who administer anesthetics: (1) the experienced, (2) the occasional user and (3) the inexperienced. This paper is especially intended for the one who would be considered inexperienced, even though he might have informed himself by reading or by other means than the actual use of anesthetics. The inexperienced person who has attended good demonstrations of the use of a given agent is an exception. There is no better way to teach the art of anesthesia than by practical demonstrations, and I would advise those interested in anesthesia, but who are inexperienced, to take advantage of present-day opportunities to receive such teaching.

The anesthetist, whatever he sees demonstrated, whatever he knows, and whether he is experienced or inexperienced, should never forget that, of two anesthetic agents of similar toxicity, the more volatile one is the safer.

SILENT MASTOIDITIS

GEORGE D. WOLF, M.D.
NEW YORK

The diagnosis of silent mastoiditis is often difficult because of the very mild systemic as well as local manifestations of the disease.

Silent mastoiditis may be defined as an insidious progressive destruction of the mastoid process with or without otorrhea. The disease is afebrile and painless in its course. The tympanic membrane is usually involved, the hearing may be slightly or considerably impaired, and a history of some middle ear infection is frequently obtained.

Occasionally the ear condition is discovered only after the appearance of systemic or intracranial complications. In infants postauricular swelling or subperiosteal abscess may often be the first indication of mastoid involvement.

The response to timely surgical intervention is usually satisfactory, but failure to recognize the condition may lead to serious consequences.

Silent mastoiditis has been discussed in otologic literature under various and confusing names. Thus, Amberg [1] suggests dividing mastoid disease into three groups: mastoiditis acutissima, acuta and subacuta. The objection to the use of the name subacute mastoiditis for the disease discussed here is that it is a type of true mastoiditis preceded by no obvious acute phase.

"Latent mastoiditis" [2] and "mastoiditis without apparent involvement of the middle ear" [3] are terms that have been used most freely in recent years. Hempstead [3] differentiates the two: "Mastoiditis, without apparent involvement of the middle ear, should not be confused with latent suppurative otitis media. In these cases there is deafness and sometimes pain, but no spontaneous discharge of pus. The tympanic membrane is without luster, full, and sometimes markedly bulging, and paracentesis is always followed by the discharge of pus."

The descriptive phrase "primary mastoiditis" [4] is being employed less often, and nearly all careful observers doubt whether mastoiditis, excluding the traumatic type, is ever primary.

Other terms employed to describe this condition are asymptomatic,[5] atypical evolution,[6] atypical,[7] hidden,[8] dry necrosis,[9] hyperplastic serosa,[10] idiopathic,[11] insidious,[12] painless,[13] symptomless,[14] unusual types,[15] vacuum,[16] without tympanitis,[17] and the like. Most of these terms do not express the entire clinical and pathologic picture and do not hint at the main features of the disease.

For the sake of uniformity it is suggested that the term "silent mastoiditis" should be adopted, except when the classic acute mastoiditis is described with a subtitle to indicate the pathologic factor. This is particularly desirable since the term "silent" is frequently employed for similar clinical pictures, such as silent tuberculosis, silent bronchiectasis and silent gallstones.

Great progress has been made in the surgery of the temporal bone, in reducing mortality, in the duration of postoperative treatment, and in postauricular disfigurement.

Although Friesner [18] recently suggested a chemical test of the aural exudate to determine bone destruction, time alone will tell whether this is satisfactory. For the present, the physician still relies on his experience and clinical judgment. When to operate is a question of debate on which internists, surgeons and otologists themselves are by no means in agreement. There are some who operate early and others who prefer to wait, even in strongly suggestive cases. In Dench's [19] opinion, an ear discharge that does not clear up in two weeks justifies mastoidectomy.

From the Department of Otolaryngology, Sydenham Hospital.

1. Amberg, Emil: Nomenclature of the Various Affections of the Mastoid, Detroit M. J. **4**: 241 (Nov.) 1904-1905.
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19. Dench, E. B. D.: Obscure Cases of Mastoid Involvement, New York M. J. **103**: 529-532 (March) 1916.

Koerner [20] has always found bone destruction when there is a profuse ear discharge lasting from four to six weeks. He believes however that, when the discharge tends to diminish in character but lasts even longer than from four to six weeks, bone involvement may or may not be present.

Indeed, the patient with silent mastoiditis presents a most perplexing problem to the otologist. In many instances the symptoms are so slight that it is difficult to convince the patient or even the family physician that the pathologic process is in the mastoid cell.

The following case will illustrate this point:

CASE 1.—B. S., a man, aged 47, married, a dentist, developed a sharp pain in the right ear after surf bathing four days previously. After six hours the ear drum ruptured and the pain subsided. On examination, Aug. 27, 1929, his right ear showed a small amount of pus. When this was wiped away, a small central perforation was apparent. There was no tenderness over the mastoid region, nor was there any other significant objective sign. Hearing was slightly diminished. The rectal temperature was 98.6 F. The patient was advised to have the drum incised in order to allow better drainage, but he refused to submit to myringotomy until the third week of his illness.

From then on he continued under office treatment and observation for ten weeks, throughout which time the rectal temperature varied from 98.6 to 98.8 F. There were no other outward signs or symptoms except for some diminution of hearing on the right side and some narrowing of the right ear canal. The patient continued with his professional and social duties without any interruption until October 25, almost ten weeks from the date of the onset, when he was seized with a severe right-sided hemicrania. Objectively, except for some pain on deep pressure over the antrum region, there were no significant changes.

A roentgenogram at this time showed evidence of a large cavity occupying nearly all of the lower half of the mastoid process. The blood count revealed: leukocytes, 7,400; neutrophils, 80 per cent, of which 67 per cent were segmented form and 13 per cent band form; 16 per cent lymphocytes, and 4 per cent mononuclears.

He was admitted to Sydenham Hospital, and October 30 a mastoidectomy was performed. At operation an empyema of the mastoid with a perisinuous abscess was found. The postoperative course was uneventful. The wound healed on the third postoperative week. The ear canal was dry and hearing returned to normal.

ETIOLOGY AND PATHOLOGY

It is generally conceded that all cases of middle ear infection are accompanied by mastoid involvement. In the great majority of cases the process in the mastoid resolves spontaneously, although a small but appreciable percentage pursues a silent course. The probable explanation for this, although necessarily conjectural, is nevertheless based on clinical experience. The virulence of the organism and the resistance of the individual play an important rôle.

Anatomic variations of the temporal bone must be regarded as important factors in influencing the course of the disease. Mithoefer [21] thinks that a thick cortex masks the symptoms greatly. A narrow antrum will dam the secretions. In a small-celled mastoid, "the small alveoli, besides being invested with a thin epithelium, also contain a connective tissue layer in the interstices of which are present large numbers of leukocytes. The latter offer a certain amount of protective influence, which may limit the spread of the infection for the time being and may have a tendency to establish a latent character of the disease."

The same condition might also explain the absence of reaction temperature. For the absence of pain even in cases of empyema of the mastoid process, Buck [13] suggests that the various organisms responsible for the bone destruction may produce toxins possessing a decidedly anesthetic power over the sentient nerve fibers. He cites tuberculous ear involvement as an example.

Free pus may or may not be found. One usually encounters an abundance of granulation with bone destruction and, frequently, exposure of the dura over both the lateral sinus and the middle fossa.

Any organism may cause either silent or typical mastoiditis. Streptococcus mucosus-capsulatus of Schottmüller (type III pneumococcus) deserves special attention. It causes a type of otitis and mastoiditis that differs considerably from the ordinary suppurative organism. It is endowed with the ability to destroy bone quietly, and it has a marked predilection for nerve structure.

Clinically, according to Dickie,[22] the onset of mucous otitis is characterized by painlessness and absence of fever. There is some impairment of hearing, tinnitus, and a sensation of fulness in the ear. The drum-head shows only trifling changes, such as slight opacity with reddening of the malleus. Frequently no perforation occurs and the condition apparently subsides, although the deafness and a sensation of fulness persist. After a period varying from one to as long as three months, symptoms of mastoiditis or intracranial complications develop. During the quiescent stage it is unusual to find mastoid tenderness, even where there is extensive caries of the underlying bone. The discharge is noticeably sticky and mucoid.

The condition in its earlier stages is almost indistinguishable from mucoid subacute middle ear catarrh; hence the latter condition must always be viewed with suspicion and kept under observation for some time.

The following case is typical:

CASE 2.—H. S., a married man, aged 54, a merchant, seen Jan. 4, 1933, had had a head cold six weeks before, followed a week later by pain in the left ear. Four days later the ear drum was incised by his local physician with temporary relief. About one week later the pain in the ear returned and the drum was reincised. The ear discharge gradually decreased, but a severe buzzing in the left ear and mild headaches persisted.

On examination the patient appeared to be well nourished, but his tongue was thickly coated. The left ear canal was filled with a thin mucopurulent discharge; there was a small perforation in the lower external quadrant, and the fundus was narrowed. There was decided evidence of periostitis in the region of the left mastoid. He could hear neither the whispered nor the spoken voice with his left ear, while tuning fork tests showed loss of hearing for both high and low tones. The Weber lateralization was not conclusive. The rectal temperature was 99.6 F.

These changes suggested the clinical diagnosis of mastoiditis due to Streptococcus mucosus-capsulatus, and immediate operation was advised. At the hospital, urinalysis and complete blood examination were essentially negative. However, the roentgen examination showed the left mastoid hazy, the trabecula absorbed, and interseptal markings coalesced. At operation the following day the superficial layers of the mastoid cells were found to be necrotic and filled with granulations. The deeper layers and the aditus ad antrum were filled with pus. A simple mastoidectomy was performed. While culture from the canal revealed Streptococcus haemolyticus, that from the mastoid showed Streptococcus mucosus-capsulatus. The post-

20. Koerner, quoted by Amberg, Emil: Why Mastoiditis Is Sometimes Misunderstood, M. Rec. **75**: 641-644 (April) 1909.

21. Mithoefer, William: Latent Mastoiditis, Lancet Clinic, May 1914, pp. 552-555.

22. Dickie, J. K. M., in Jackson, Chevalier, and Coates, G. M.: The Nose, Throat, and Their Diseases, Philadelphia, W. B. Saunders Company, 1929, p. 445.

operative course was uneventful. After four weeks the mastoid wound was completely closed, the ear dry, and the perforation healed. Hearing returned to normal, but the tinnitus, though diminished, was still annoying.

DIAGNOSTIC CRITERIA

Of necessity, diagnostic criteria must be presented with reservations. Although no single sign or symptom is conclusive in the diagnosis of silent mastoiditis, a correlation of all evidence presented will lead, in most cases, to a correct conclusion.

1. *History.*—A careful history of the onset of all symptoms, no matter how slight, their clinical course and their present status is of prime importance. The type of treatment and its effects on the subjective or objective changes should be considered.

2. *Discharge.*—The absence of aural discharge is rare. When otorrhea exists, the duration and nature of the discharge should be noted. Bone involvement must be strongly suspected if, in spite of intelligent treatment over a period of three weeks, the discharge has not abated or ceased, so that the patient states that his pillow is considerably stained with pus after he has lain on the diseased side. The type of discharge is most important. A thin discharge is generally due to an involvement of the mucous membrane of the middle ear, whereas a thick, fetid discharge usually signifies bone necrosis.

3. *Hearing.*—Repeated examinations of the hearing on the affected side are sometimes helpful. Progressive loss of hearing indicates bone or auditory nerve involvement. Unfortunately, good hearing does not exclude the possibility of extensive bone destruction or serious intracranial complications.

4. *Objective Manifestations.*—Pasty appearance, thickly coated tongue and loss of weight may be in evidence. The drum head usually shows definite changes, such as narrowing of the external auditory meatus near its fundus with apparent shortening of the meatus. Deep mastoid tenderness and edema over the mastoid area late in the disease (Griesinger's sign), no matter how slight, are further indicative.

5. *Headaches.*—Headaches must be carefully watched for. No other symptom merits more consideration on the part of the attending physician. One should not wait until the patient complains of headaches but should make constant, though diplomatic, inquiry to discover this symptom. Headache is probably nature's first signal of some meningeal irritation before the meninges are actively invaded.

6. Nausea and vomiting are of significance.

7. Sleeplessness and restlessness at night are often valuable clues, especially in children, in cases in which other information is either unobtainable or unreliable.

8. *Transillumination.*—The use of the Mosher transilluminator is advocated by Bacon,[23] and Shambaugh is very enthusiastic about this diagnostic aid. In a drawn out case of silent mastoiditis, in which repeated radiographic examinations are not practicable, this method might be of value.

9. *Laboratory Aids.*—A great deal has been written on this phase of the subject, and the literature reflects the lack of adequate evaluation of the various laboratory procedures as diagnostic aids. These can be grouped as (1) bacteriologic, (2) hematologic and (3) radiologic.

Bacteriologic: Bacteriologic studies are of some diagnostic and prognostic aid. Only smears obtained from the ear canal at the time of or very shortly after the paracentesis or spontaneous rupture are of value. Later on the infection becomes a mixed one.

The presence of either the hemolytic or the nonhemolytic streptococcus does not necessarily indicate serious involvement, since most of these cases, in spite of their stormy onset, subside very quickly. However, the presence of an encapsulated streptococcus should put the physician on his guard immediately. Absence of the capsule does not, per se, absolutely exclude this organism, because of its known ability to lose the capsule in certain culture mediums.

In suggestive cases the tubercle bacillus should be searched for, and guinea-pig injections may be necessary. Mycotic infection of the ear canal is not uncommon. In rare instances Vincent's organism is at the bottom of the trouble and should be looked for. The diphtheria bacillus in ear infections has been reported on a number of occasions.

Hematologic: It is essential to bear in mind that the lesions confined to the cellular bone structure do not show as high leukocytolysis or relative polynucleosis as when the soft parts are involved. Hence a high blood count does not necessarily indicate mastoid disease, nor does a low one exclude it. In this connection the Schilling count may be helpful. The main practical feature of the Schilling count is the recognition of the nonsegmented (band) neutrophil cell, which normally constitutes from 4 to 8 per cent of all leukocytes. According to Eisenberg and Nemens:[24]

> If the infection is progressing, the most dependable hematologic sign is the increase in percentage of the band cells, regardless of whether the total leukocyte (W. B. C.) count and the total neutrophil count rise. If the two latter counts are also high, it is ever so much more favorable than when they are low. This would point to the exhaustion of the hematopoietic activity of the bone marrow. In other words, the steady rise of the band cell points to an invasive, progressive nature of the infection, pus formation, and, if postoperative, to unfavorable termination.

3. Radiologic: In every case in which mastoid involvement is suspected, a roentgenogram should be made. The following should be looked for: (1) direct evidence of bone destruction; (2) regional anatomy—whether the mastoid is pneumatic, diploic, sclerotic, large, small or mixed cell type, and the position of the lateral sinuses. Not only is this information of assistance in interpreting the clinical behavior but it is also of definite value at the time of the operation.

It is necessary to emphasize here that particular attention should be paid to the radiologic technic, careful angulation and proper exposure being employed, since failure to do so may give misleading results. It is also necessary to bear in mind that a previous infection in the same ear may confuse the picture and must be differentiated from the current pathologic changes.

DIFFERENTIAL DIAGNOSIS

In the differential diagnosis of silent mastoiditis the following conditions, according to Turner,[25] must be excluded:

1. Tuberculosis of the middle ear, which has a painless onset. The discharge is watery in the beginning and later becomes flocculent. It may also become

23. Bacon, Gorham: Laboratory Aids in the Diagnosis of Mastoid Disease, M. Rec. **86**: 1-3 (July) 1914.

24. Eisenberg, A. A., and Nemens, H. S.: Value of the Schilling Hemogram in Infections, Am. J. Surg. **21**: 56-71 (July) 1933.

25. Turner, A. L.: Diseases of the Nose, Throat, and Ear, ed. 3, Baltimore, William Wood & Co., 1932, p. 396-398.

offensive and purulent. The lymph glands surrounding the ear are enlarged. Multiple perforations of the tympanic membrane are pathognomonic. Facial paralysis develops in 45 per cent of the cases.

2. Syphilis, which is characterized by a rapid onset of deafness, and the labyrinth is often affected. Tinnitus is marked and giddiness may be present. Pain is very slight.

3. Malignant conditions. Carcinoma in adults and sarcoma in children are very rarely encountered. Here discharge is copious and fetid. The granulations are exuberant, bleed easily, and recur readily after removal.

PROGNOSIS

The large number of chronic cases of discharging ears of many years' standing which do not respond to local conservative treatment are instances of an old, overlooked silent mastoiditis. Besides being annoyed with constant or remittant otorrhea, the patient finds his hearing becoming more and more impaired on the involved side, and frequently an increased severity of symptoms may necessitate a radical mastoidectomy, with total loss of hearing as a postoperative result.

The following case is an example of a silent mastoiditis on one side and a flareup on the other side in a patient who had had a silent mastoiditis twenty-five years previously. The patient also suffered from chronic lymphatic leukemia and diabetes.

CASE 3.—S. H., a man, aged 68, married, seen in the office, April 17, 1929, had had a pain in the right ear, following a mild infection of the upper respiratory tract four weeks before, which discharged spontaneously forty-eight hours later with abatement of the local pain. There followed a profuse aural discharge, for which he had been under the care of a local physician. A week before the examination he had been suffering from a severe hemicrania, with an impairment of hearing on the affected side. There was a history of diabetes mellitus of long duration. About twenty-five years before, after a mild acute otitis media, his left ear drum had ruptured spontaneously. There had been a remittent aural discharge, which, except for the deafness on that side, had given little trouble.

On examination, both ears were found to be filled with thick pus. There was a large central perforation in the left ear drum, with pus under pressure coming out constantly. The left tympanic membrane was practically destroyed. There was no local tenderness or edema in either mastoid region and no Romberg sign, spontaneous nystagmus, ataxia, or past pointing. He could hear only loudly spoken voices. The rectal temperature was 98.6 F. Hospitalization was advised for immediate treatment of what seemed to be right silent mastoiditis.

The patient was admitted to Sydenham Hospital the same day. Urine examination revealed: sugar, 2.7 per cent; acetone, present; blood sugar, 250 mg. per hundred cubic centimeters; blood count: hemoglobin, 79 per cent; red blood cells, 4,064,000; white blood cells, 9,600; polymorphonuclear leukocytes, 18 per cent, of which 12 per cent were band forms; large lymphocytes, 78 per cent; mononuclears, 2 per cent; lymphoblasts, 4 per cent, and many basket-shaped cells. At a subsequent blood examination the large lymphocytes increased to 92 per cent.

After the administration of sufficient insulin to control the excess of blood sugar, the patient was operated on the following day. The right mastoid was filled with thick pus. There was enormous destruction of bone, with epidural and perisinuous abscesses. Culture from the mastoid showed Streptococcus nonhaemolyticus. The postoperative course was uneventful, and the patient left the hospital on the tenth day in the care of his local physician. He was again seen, May 6. The right mastoid wound was almost completely healed, the ear was dry, and the perforation was closed. He complained, however, that shortly after reaching home he had discovered that his left ear had flared up with profuse discharge and almost constant pain. There had been an extremely severe left hemicrania for the past five days, which also kept him awake at night.

Exacerbation of the left chronic mastoiditis was evident, and he was operated on the next day. Although a radical mastoidectomy was indicated, a simple one was performed at this time because of the patient's debilitated condition. On this occasion as well, the postoperative course was uneventful, and he returned home two weeks later. When examined three months later, both mastoid wounds were healed, the ears were dry, and the left tympanic membrane even showed a tendency toward regeneration. Hearing in both ears improved considerably but did not return to normal.

It is safe to say that, in many instances in which a patient is advised to submit to an operation and apparently recovers without it, there is no proof that the advice was wrong. While in some cases the recovery may be permanent, not infrequently recurrences requiring operative intervention take place sooner or later. In discussing this point, Braun [2] says:

> Where the symptoms of an acute mastoiditis have subsided under conservative treatment and after several weeks or months of good health the symptoms recur, we are not dealing with a second attack of mastoiditis in the majority of cases. We will usually find that the disease has been progressing continually since the first attack, and these cases always show extensive bone involvement with (not commonly) some intracranial complications.

The following experience confirms this opinion:

CASE 4.—M. W., a girl, aged 9½ years, admitted to Sydenham Hospital March 3, 1933, had suffered an attack of acute otitis media two years previously. At that time the ear drum drained for one week. Since then there had been a thin discharge from that ear at regular intervals. During the early part of January 1933 she had a recurrent acute attack of right otitis media, and the drum ruptured spontaneously. This time the discharge persisted. For one week before admission she complained of severe pain in the right supra-orbital region, which was accompanied by projectile vomiting. No speech, mental, gait or psychic disturbances were noted. She had no convulsions or other neurologic manifestations.

On examination the ear showed slight mastoid tenderness without edema. The ear drum had a large central perforation with a thin discharge exuding. She had, however, well marked meningeal signs, which were described by Dr. Wechsler, neurologist, as follows: "Child alert and cooperative, apparently in no pain. Mild neck rigidity, bilateral Kernig, hyperactive reflexes, with ankle and patellar clonus, bilateral Babinski, good abdominal reflexes, corneal reflexes present. No palsies, no ataxia, no sensory disturbances, no ocular, facial, palatal or tongue palsies, slight horizontal and vertical nystagmus, particularly to right side, somewhat to left. There is a slight blurring of the right disk margin. There are no signs of cerebellar or temporal lobe abscesses."

Urinalysis revealed from 5 to 15 white blood cells per low power field. Examination of the blood showed: hemoglobin, 75 per cent; red blood cells, 4,990,000; white blood cells, 9,050, subsequently increased to 31,900; segmented forms, 44 per cent; band forms, 16 per cent; small lymphocytes, 34 per cent; large lymphocytes, 6 per cent. Spinal fluid was under increased pressure and showed 650 polymorphonuclear leukocytes per cubic millimeter. Cultures of the blood, spinal fluid and smear from the mastoid at operation were positive for Streptococcus brevis.

An epidural abscess was found at operation, with old granulations and necrotic mastoid cells. The dura was covered with granulations and seemed under pressure.

In spite of the obliteration of the lateral sinus, the ligation of the jugular vein, repeated forced spinal drainages, and administration of antistreptococcus serum and whole blood transfusions, the child died on the twenty-fourth day after admission.

It seems fair to assume that the present pathologic process was a continuation of the process initiated two years previously and that this life might possibly have been saved by an early mastoidectomy.

However, such instances are not uncommon. Otologic literature is replete with many cases of brain abscesses, general sepsis, and other complications following silent mastoiditis.

COMMENT

It is not the intention to convey in this paper the impression that every case of ear infection that does not clear up quickly is necessarily surgical. Watchful waiting is often the best procedure. It is necessary, however, to realize that the mildness of the symptoms is not indicative of the extent of the involvement of the mastoid process. When the case becomes protracted, vigilance on the part of the attending physician is of importance. Unless the ear becomes perfectly dry, the perforation of the drum healed and its luster regained within a reasonable length of time, the physician must not give the patient a false sense of security, even if pain and fever are absent. It is certainly unwise to allow a patient who is otherwise well to go on to the stage of chronicity until all means, including surgical, have been exhausted. Even if meningeal and other complications are comparatively rare, the patient is often doomed to a steady or intermittent otorrhea with marked impairment of hearing. In many instances, timely surgery will prevent these distressing sequelae.

SUMMARY AND CONCLUSIONS

1. Attention is again called to a clinical type of mastoiditis, perhaps best characterized as silent mastoiditis because of the lack of frank clinical manifestations in the presence of a progressive pathologic process.

2. This condition is important because it is relatively common, frequently produces serious auditory damage and not uncommonly causes death through intracranial or systemic complications.

3. Mastoidectomy is the rational, conservative and effective treatment for this condition. This operation in competent hands is always safe and is practically without mortality. It should therefore be preferred to chronic invalidism and possible dangerous complications.

4. Headaches during the course of ear infection should be regarded as an early warning against procrastination of adequate surgical therapy.

5. The cases that have been presented illustrate the clinical features of silent mastoiditis, the diagnostic problems it may present, and the therapeutic procedures required to obtain satisfactory results.

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Anatomy and Physiology of the Psyche.—The outstanding goal of our efforts as I see them today and as they are represented by the psychoanalytic school is to build up slowly and painstakingly an anatomy and a physiology of the psyche comparable in exactness of its outlines and complexity of its structures to the anatomy and physiology of the body. If our thinking is moving along in the right direction we much believe that bodily and mental states are not either separate or different from one another but are only two aspects of the organism-as-a-whole, from either one of which we may view its activities. If this is so, as I have reiterated so many times, then the history of the psyche reaches as far into the past as that of the soma, and for each state of one there is a corresponding repercussion in the other.—White, W. A.: Psychiatry as a Medical Specialty, Thomas W. Salmon Memorial Lecture, read before the New York Academy of Medicine, April 12, 1935.

INJURIES TO MUSCLES AND TENDONS

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The accuracy of diagnosis that one associates with fractures is lacking when the injury involves muscles and tendons. The overlapping of the latter structures and their supplementary actions make for confusion in diagnosis, often render treatment illogical and prolong convalescence. It is only by a careful segregation of the distinct clinical entities that real progress can be made. In order to review the clinical picture of these injuries we have analyzed a series of 100 injuries to muscles and tendons, which represents a cross section of private, industrial and clinic practice. We have omitted the injuries to soft parts which resulted from lacerated wounds or compound fractures.

In a consideration of the injuries of muscles and tendons, one should employ a classification such as the following, which seems to us logical because it is based on the causative forces, the contributing factors and the relative frequency:

1. Direct trauma.
   A blow or crushing force applied to a muscle.
2. Indirect trauma.
   (*a*) A stretching force applied to a contracting muscle or its tendon.
   (*b*) A sudden or unusually forceful contraction of a muscle.
3. Spontaneous rupture.
   (*a*) Post-traumatic.
      I. A single injury which so weakens a muscle or tendon that rupture occurs at a later date.
      II. Often-repeated minor injuries; for example, the rupture of the extensor pollicis longus tendon following a Colles fracture.
   (*b*) Disease of the tendon or muscle: tuberculosis, gonorrhea, syphilis or typhoid.
   (*c*) Senility, a factor that is often combined with one of the foregoing conditions.
4. Dislocation of tendons.
5. Herniation of a muscle through its sheath.

Statistics regarding the muscles or tendons involved, the most comprehensive of which are given by Grassheim[1] (500 cases), list the following ruptures in the order of their frequency: Muscles of the calf, extensors of the leg, biceps, achilles tendon and extensor of the thumb. In recent years certain other muscles have been found to be the site of frequent ruptures; namely, supraspinatus, triceps, rectus abdominis, adductors of the thigh and extensors of the fingers. From the well executed experiments of McMaster,[2] on the breaking weight and site of rupture of a preparation of muscle and tendon, it is concluded that the normal tendon does not rupture but that rupture occurs at one of the following sites: the attachment of tendon to bone, the musculotendinous junction, or through the muscle substance. Before we present our statistical observations, certain distinct clinical entities should be described.

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1. Grassheim: Indirekte Muskel und Sehnenrisse in der Unfalls Medizin, Monatschr. f. Unfallh. **29**: 313-319, 1922.
2. McMaster, P. E.: Tendon and Muscle Ruptures, J. Bone & Joint Surg. **15**: 705-722 (July) 1933.

TEAR OF THE SUPRASPINATUS TENDON

Injuries to muscles that have attachment to the shoulder girdle offer some of the most perplexing problems in diagnosis. The frequency and importance of partial or complete tears of the supraspinatus tendon have been recognized only since the work of Codman.[3] However, we feel that Codman confused certain anatomic changes in the shoulder that are the result of senile wear and tear with purely traumatic lesions. Meyer[4] described the attritional changes of the shoulder, and one of us (R. S.-H.) had the opportunity to inspect a large series of his dissections of the shoulder. These shoulders present longitudinal fibrillations or fraying of the supraspinatus tendon, and even perforation into the joint. However, these perforations have round, smooth edges suggesting prolonged wear and tear. Degenerative processes are visible also on the surface of the acromion. Clinically, the fact that supraspinatus tears are rather infrequent has been strongly impressed on us,

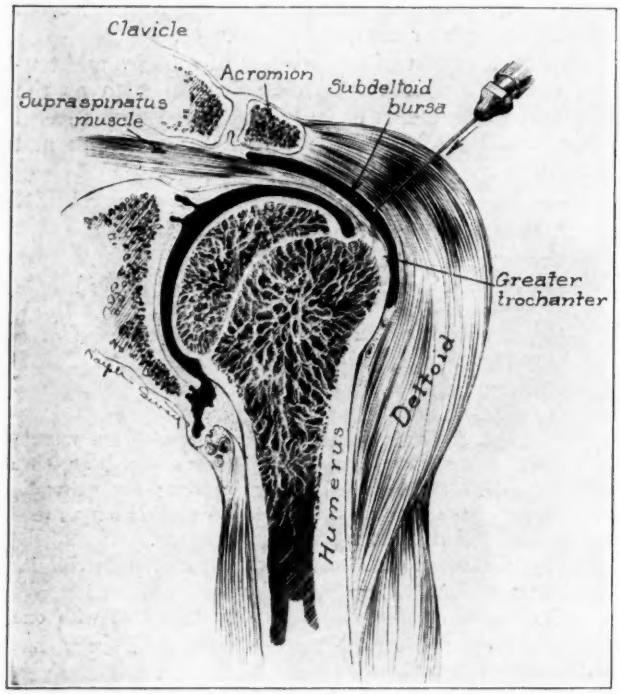

Fig. 1.—Frontal section of the shoulder region, to show the point of insertion of the needle for the purpose of anesthetizing the subdeltoid bursa as a diagnostic and therapeutic procedure.

following the injection of procaine hydrochloride into the subdeltoid bursa as a differential diagnostic method.[5] We believe certain acutely painful shoulders, with traumatic onset and complete loss of abduction, are the result of reflex inhibition of the supraspinatus muscle.

The supraspinatus tendon forms the roof of the shoulder joint and the floor of the subacromial or subdeltoid bursa. Conditions involving these two structures must be differentiated from tears of the supraspinatus tendon, for which purpose we have followed a routine method of examination.

1. The history in cases of injury to the supraspinatus tendon is usually that of a fall on the shoulder or on the outstretched arm, which is followed by an immediate and complete loss of the power to initiate abduction. The gradual onset of limitation of abduction suggests an arthritis or bursitis.

2. On physical examination one observes an atrophy of the supraspinatus muscle, the extent of which depends on the period of time that has elapsed since injury. On attempting to raise the arm, the patient often leans to the affected side to permit the weight of the arm to initiate abduction. Once the arm is partially abducted, the deltoid muscle can act to complete this movement. There may be a point of tenderness over the roof of the shoulder joint just beyond the tip of the acromion, if the supraspinatus tendon is torn.

3. The roentgenogram of the shoulder with a light exposure may demonstrate or rule out calcification of the subdeltoid bursa, arthritis or fracture in the region of the shoulder. In tears of the supraspinatus tendon, the head of the humerus may be found in a higher position than normal in relation to the glenoid fossa.

4. In acute cases we have made it a practice to inject from 10 to 15 cc. of 1 per cent procaine hydrochloride into the subdeltoid bursa (fig. 1). The needle is directed toward the upper border of the greater tuberosity of the humerus. As soon as the bone is struck, the needle is withdrawn one-eighth inch and an attempt is made to aspirate any fluid that may be present in the bursa; then the procaine is injected, followed by a small amount of air. In those cases in which there is a reflex inhibition of function of the supraspinatus muscle as a result of subdeltoid bursitis or adhesions, the patient is able to abduct his arm actively a few minutes after this injection of procaine. Under the local anesthesia so produced it is possible to carry out stretching movements of the shoulder joint that have a valuable therapeutic effect. A similar benefit was observed from the injection of procaine into calcified subdeltoid bursae. These often show a disappearance of the calcium deposits within a few days, and the patient's subjective symptoms also disappear. In such cases no other type of treatment is required, although we sometimes repeat the injection. If no improvement in the active abduction of the shoulder results from this injection, the diagnosis of tear of the supraspinatus tendon is made certain.

5. In chronic cases in which an injury to the supraspinatus tendon is suspected, the problem is largely that of ruling out the effect of periarticular adhesions, which limit both passive and active abduction of the shoulder. We have found it possible to stretch many of these adhesions by the application of double skin traction for from five to seven days. The patient lies in a semi-Fowler position, with from 6 to 8 pounds of traction applied along the axis of the humerus with the shoulder abducted as much as possible. At the same time, the elbow being flexed at 90 degrees, about 5 pounds of traction is applied to the forearm so as to rotate the shoulder externally. The amount of abduction and external rotation of the shoulder so obtained is increased gradually, during which time the relaxation of the muscles is favored by the use of an electric pad. In many of these cases the stretching and breaking of adhesions restores the function of the shoulder and rules out the question of injury to the supraspinatus muscle.

When a diagnosis of tear of the supraspinatus tendon has been made, the treatment will depend on the completeness of the tear. The use of an abduction splint

3. Codman, E. A.: On Stiff and Painful Shoulders, Boston M. & S. J. **154:** 613-620, 1906; The Shoulder: Rupture of the Supraspinatus Tendon and Other Lesions in or About the Subacromial Bursa, Boston, Thomas Todd Company, 1934.

4. Meyer, A. W.: Spontaneous Dislocation and Destruction of Tendon of Long Head of Biceps Brachii: Fifty-Nine Instances, Arch. Surg. **17:** 493-506 (Sept.) 1928.

5. Soto-Hall, Ralph, and Haldeman, K. O.: Muscle and Tendon Injuries in the Shoulder Region, California & West. Med. **41:** 318-321 (Nov.) 1934.

for from four to six weeks, followed by physical therapy, will suffice in cases of partial tear. A complete tear should be repaired surgically as soon as its diagnosis is made, because much harm will result from delay. A short incision, made by splitting the anterior fibers of the deltoid muscle, will give sufficient exposure of the roof of the shoulder joint to permit the diagnosis of tear of the supraspinatus tendon to be confirmed. The superior end of this incision is then extended back and over the acromion (the saber cut incision) and this structure is severed at its base and turned down with the deltoid muscle, to expose the supraspinatus tendon. The ruptured tendon may be reinserted in a groove in the tuberosity of the humerus and the acromial process fixed in place with a beef bone peg. The shoulder must be immobilized in abduction for three or four weeks after operation.

RUPTURE OF THE LONG HEAD OF THE BICEPS

The subject of rupture of the long head of the biceps was to have been introduced by stating "The attention of the profession has been recently directed to the rupture and dislocation of the long head of the biceps" until it was found that these exact words were written by Robert Storks [6] in 1843. A further perusal of the literature revealed a description by J. G. Smith,[7] just 100 years ago, of the shoulders of five cadavers which presented tears of the tendons of the supraspinatus, infraspinatus, subscapularis and long head of the biceps in various combinations. This author also observed the medial dislocation of the latter tendon out of the bicipital groove and described graphically the arthritic changes that were associated with ruptures of the tendons around the shoulder joint. Picard [8] in 1838 described a rupture of the biceps tendon at the commencement of its groove, in the autopsy of a patient who had presented a nutlike swelling of the biceps muscle during life.

Of the many other authors who have written on this subject during the past century, mention should be made of Morton,[9] who in 1886 was the first to describe the operative repair of a ruptured biceps tendon, and of Ledderhose,[10] who reviewed the literature thoroughly up to 1909 and advanced the thesis that degenerative changes must be present in a biceps tendon prior to its rupture. Of recent articles, the most comprehensive have been written by Ghetti,[11] who presented seven cases and reviewed the European literature, by Gilcreest,[12] who made a painstaking analysis of 100 cases of injury to the biceps muscle, and by Meyer,[4] who described fifty-nine dissections of shoulders showing a rupture or dislocation of the long head of the biceps.

Tears of the biceps tendon become more frequent with advancing years because of the fraying out of the tendon where it is subjected to constant friction in the bicipital groove and over the head of the humerus. The actual rupture usually results from a sudden forceful contraction of the biceps muscle against a counterforce. The presence of such an injury becomes apparent when the patient flexes his elbow against resistance. If the long head is ruptured, the belly of the biceps muscle will assume a spherical shape as the result of an abnormal depression at its superior lateral border, which is in striking contrast to the oval contour of the normal contracting biceps. (Five of our patients are shown in figure 2, in all of whom the diagnosis was later confirmed by operation.) This injury results in marked weakness of the flexor muscles of the elbow and is frequently accompanied by pain over the anterior aspect of the shoulder joint or over the bicipital groove. Patients for whom no repair is done lose some of the power of abduction, owing to the formation of periarticular adhesions.

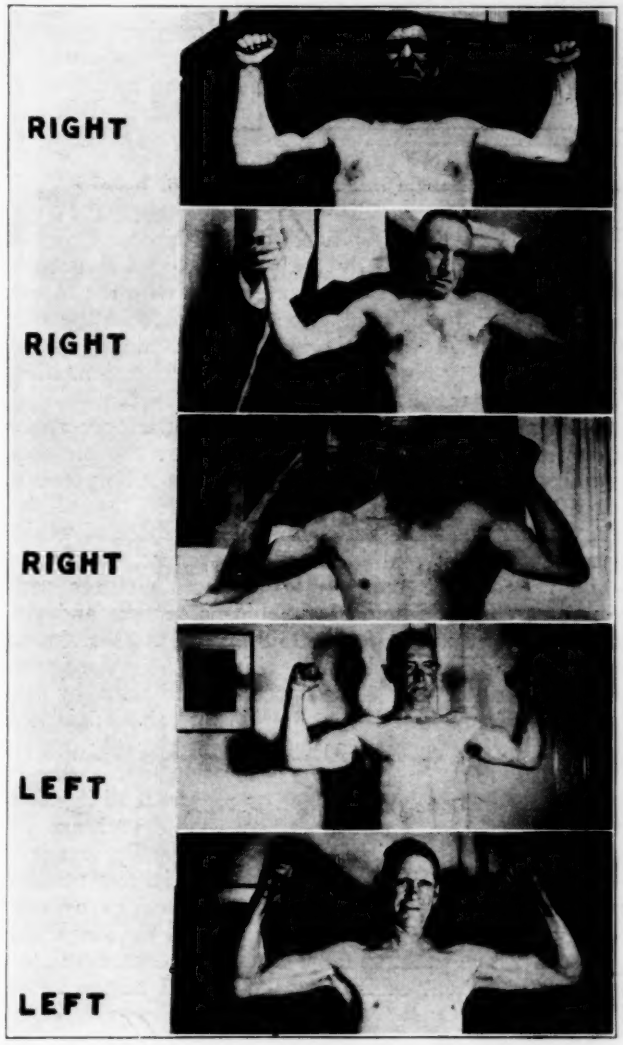

Fig. 2.—Preoperative appearance of five patients in whom the diagnosis of "rupture of the long head of the biceps muscle" was later confirmed by exploration. A depression is visible in the contour of the injured muscle near its upper pole.

In recent tears, an interesting diagnostic problem arises. The hematoma produced by a tear in the upper part of the tendon gravitates downward through the sheath to the region of the belly, where it presents. The ecchymosis and tenderness suggest that the tear took place at the musculotendinous junction. This occurred in two cases in which we exposed the belly of the biceps muscle and then had to carry the incision upward to find the tear in the bicipital groove.

6. Storks, Robert: Rupture of the Tendon of the Biceps, Lancet **2**: 621, 1842-1843.
7. Smith, J. G.: Pathological Appearances of Seven Cases of Injury of the Shoulder Joints with Remarks, Am. J. M. Sc. **16**: 219-224, 1835.
8. Picard: Extracts from the Proceedings of the Societé anatomique, Bull. Soc. anat. de Paris **13**: 41-42, 1838.
9. Morton: Rupture of Long Tendon of the Biceps Muscle Due to Muscular Effort: Suture, and Successful Result, Philadelphia M. Times **17**: 120, 1886.
10. Ledderhose, G.: Zur Frage der Ruptur des Bicepsbrachii, Deutsche Ztschr. f. Chir. **101**: 126-176, 1909.
11. Ghetti, L.: Contributo allo studio della rottura sottocutanea dei tendini de inserzione del muscolo bicipite brachiale, Chir. d. org. di movimento. **17**: 137-170 (June) 1932.
12. Gilcreest, E. L.: The Common Syndrome of Rupture, Dislocation and Elongation of the Long Head of the Biceps Brachii: An Analysis of 100 Cases, Surg., Gynec. & Obst. **58**: 322-340 (Feb. [No. 2A]) 1934.

It is extremely important for the return of function that such an injury be diagnosed early and that an adequate repair of the torn tendon be carried out. We usually operate for this condition under local anesthesia, with the patient sitting erect in a chair. The conscious cooperation of the patient is of great value in all operations for the repair of muscles and tendons. When the site of rupture has been exposed by an incision along the anterior border of the deltoid muscle, the type of reconstructive operation chosen will depend on the condition of the tendon and the site of rupture. If the tendon is separated from its glenoid origin, we attach it to the coracoid process along with the short head. A rupture at the musculotendinous junction may be repaired with braided silk. Rarely it has been necessary to shorten the tendon of the long head by a reefing procedure or to pass it through a hole drilled in the head of the humerus.

DISLOCATION (SLIPPING) OF THE BICEPS TENDON

Occasionally the long head of the biceps shows a tendency to slip medially out of the bicipital groove when the humerus is rotated externally, with the biceps contracting and the shoulder in abduction. In the dissecting room, Meyer [4] observed this condition to be present in thirty-nine subjects. A clinical presentation of this injury was made by Abbott [13] in 1934.

Clinically, the diagnosis is made on the occurrence of a snap, which is felt and heard over the bicipital groove and which may be painful. In patients presenting a permanent dislocation of the tendon out of the bicipital groove, the usual complaints are those of weakness of the arm and localized tenderness. There is some resemblance between the clinical pictures presented by the slipping of the biceps tendon and the crepitations found in subdeltoid bursitis. The latter diagnosis is confirmed if one is able to relieve the symptoms and cause a disappearance of the snap by the injection of procaine hydrochloride into the subdeltoid bursa, which procedure, as one patient recently put it, "seems to oil the joint."

The treatment of permanent or recurrent dislocation of the biceps tendon is operative. The presence of adhesions in the bicipital groove usually renders impossible the restoration of the normal gliding mechanism, for which reason the best results have been obtained by the insertion of the tendon of the long head through a hole drilled in the head of the humerus, or by the attachment of this tendon to that of the short head.

STRAIN OF THE RHOMBOIDEUS MUSCLES

Strain of the rhomboideus major or minor muscles is seen rather frequently in an industrial practice and is usually caused by a sudden, incoordinated movement of the shoulder. These muscles arise from the ligamentum nuchae and the spinous processes of the seventh cervical to the fifth thoracic vertebrae. They insert along the vertebral border of the scapula, which is drawn upward by their contraction.

Physical examination following this injury shows a localized tenderness between the middorsal spine and the scapula, with the production of pain at this point when the shoulder is carried passively into extreme forward flexion or is extended actively against resistance. Treatment requires the partial immobilization of the scapula, which is best accomplished by drawing it backward and upward with adhesive strapping. A similar result is obtained by winding a wide strip of elastic webbing around the upper part of the chest. When the acute signs of injury have disappeared it is well to apply baking or diathermy and light massage to the injured muscle. Strains of other muscles arising from the spinous processes and inserting on the scapula or the humerus (the trapezius or latissimus dorsi muscles) give a similar clinical picture and respond to the same treatment.

LATE RUPTURE OF THE EXTENSOR POLLICIS LONGUS FOLLOWING COLLES' FRACTURE

In our series we have one such case, a condition which, according to McMaster,[14] has been reported twenty-seven times in the literature. The causative relation of this rupture to the Colles fracture is of importance industrially because an interval of from one to three months may elapse before its appearance. Such an injury shows the effect of chronic trauma, which leads to degenerative changes and the ultimate rupture of the tendon. Two factors that affect the gliding mechanism are partial tears in the tendon and irregularity of the bone over which the tendon moves.

RUPTURE OF THE EXTENSOR TENDONS OF THE FINGERS

Among ruptures of the tendons of the fingers, detachment of the extensor tendon at its insertion (the so-called baseball finger) is one of the commonest and most troublesome injuries. The characteristic deformity can often be avoided by immediate hyperextension of the terminal joint for at least six weeks. Thoroughness in this conservative treatment is important because later operative repair is often unsuccessful.

RUPTURE OF THE RECTUS ABDOMINIS MUSCLE

An injury that may be mistaken for some intraperitoneal disease, such as appendicitis, is the rupture of the rectus abdominis muscle. This may occur during pregnancy or labor, or following typhoid that results in Zenker's degeneration of the muscle fibers. The rupture may result from a severe attack of coughing or sneezing. Such an accident usually tears a few branches of the epigastric vessels, causing a large hematoma to form within the aponeurotic sheath. Treatment may require the evacuation of this sheath surgically.

RUPTURE OF THE QUADRICEPS MUSCLE OR TENDON

Rupture of the quadriceps muscle or tendon occurs rather frequently, ranking second in the number of cases both in our series and in that of Grassheim.[1] The rupture may occur either at the point of attachment of the tendon to the patella or at the musculotendinous junction, with occasional cases through the purely muscular or tendinous portions. A direct blow is the usual cause, the patient often falling on the flexed knee. This injury occurs about as often in the young as in the aged. The diagnosis is suggested by the inability of the patient to extend the knee actively and is confirmed by the observation of a hiatus in the substance of the muscle or tendon. A lateral roentgen examination may be of value in demonstrating the gap in the muscle. The superior border of the patella is usually seen to tilt anteriorly. Many cases of partial tear of the

13. Abbott, L. C.; Saunders, J. C. de C. M., and Smith, D. W.: Traumatic Dislocation of the Tendon of the Long Head of the Biceps Brachii, presented before the sixty-third annual session of the California Medical Association in May 1934 (unpublished).

14. McMaster, P. E.: Late Ruptures of Extensor and Flexor Pollicis Longus Tendons Following Colles' Fracture, J. Bone & Joint Surg. **14**: 93-101 (Jan.) 1932.

quadriceps muscle may escape diagnosis and leave a depression in the substance of the muscle, without any permanent disability. Treatment in cases of complete rupture of the quadriceps muscle or tendon should be an early operative repair with the use of sutures of fascia lata or braided silk. Cases of partial tear heal readily if the leg is splinted in full extension for three or four weeks, followed by a period of gradual mobilization.

PARTIAL RUPTURE OF A MUSCLE OF THE CALF

"Tennis leg" is the term usually applied to a partial rupture of one of the muscles of the calf. The plantaris muscle is most often affected, although one of the bellies of the gastrocnemius may be similarly involved. The patient describes a sudden burning pain in the calf during strong contraction of its muscles and may hear or feel something snap. Pain often extends up the middle of the calf to the popliteal space and is increased by passive dorsiflexion of the ankle. Treatment should consist of the immobilization of the ankle in plantar flexion with adhesive strapping for two or three weeks, after which baking, massage and active exercise are used.

RUPTURE OF THE ACHILLES TENDON

Injury to the achilles tendon occurs most often as a result of violent exercise, as performed by sprinters, boxers and mountain climbers. The site of rupture is commonly at the junction of muscle and tendon. Incomplete rupture is shown by tenderness and ecchymosis over a depression in the achilles tendon. Such cases require immobilization in plantar flexion by a cast or adhesive strapping.

The complete tears of the achilles tendon are evidenced by a marked depression caused by the separation of its fibers, and an inability to flex the foot in the plantar direction actively against resistance. Treatment, in this type should be operative, with the repair of the tendon either with braided silk or with a suture of fascia lata.

TABLE 1.—*Incidence According to Muscle or Tendon*

A. Upper Extremity		**B. Lower Extremity**	
Supraspinatus	15	Quadriceps	14
Rupture of long head of biceps	9	Patellar tendon	5
Extensor of finger	7	Achilles tendon	5
Rhomboideus major	6	Plantaris	5
Pectoralis major	4	Gastrocnemius	4
Dislocation of long head of biceps	3	Iliopsoas	2
Infraspinatus	3	Obturator externus	2
Flexor of finger	3	Extensor of foot	1
Short head of biceps	2	Hernia of anterior tibial muscle	1
Triceps	2	Total	39
Latissimus dorsi	2		
Abductor pollicis	2	**C. Axial Muscles**	
Trapezius	1	Rectus abdominis	4
Flexor carpi ulnaris	1		
Flexor carpi radialis	1		
Total	61		

Total number of muscles or tendons.....104
(In four cases two muscles were injured)

HERNIATION OF A MUSCLE

A rare condition which is seldom described, and one case of which we have treated surgically, is the herniation of a muscle through its sheath. In our case this injury resulted from a direct blow to the anterior tibial muscle, which occurred when the patient's leg was hanging over the side of a truck and was struck by a passing automobile. The patient was disabled and continued to have pain on walking at the site of a bulge of the anterior tibial muscle through a defect in its sheath. This defect, which measured 6 by 3 cm., was repaired with strips of fascia lata; the pain on walking disappeared and the contour of the leg became normal.

A true herniation of muscle is characterized by a bulging of the relaxed muscle through a defect in its sheath and the disappearance of this bulge when the muscle contracts. On the contrary, as has been pointed out by Ledderhose,[10] the increased prominence of the belly of the biceps muscle, which is associated with a rupture of its long head, is most noticeable when this muscle is contracted.

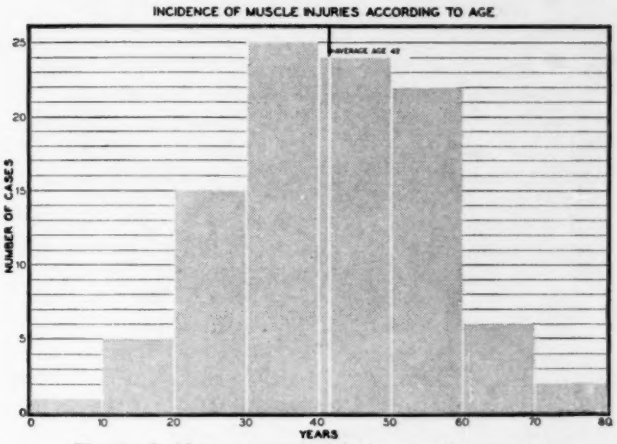

Fig. 3.—Incidence of muscle injuries according to age.

TABLE 2.—*Mechanism of Injury*

Contracting muscle subjected to stretching force	33
Direct trauma	28
Sudden forceful traction	26
Spontaneous rupture	5
Indeterminate	8
Total	100

SUMMARY AND CONCLUSIONS

Certain features are common to most ruptures of muscles. The history of a sudden sharp pain or snapping sensation, which occurs during violent muscular effort and is followed by the inability to perform certain definite movements, is very suggestive. The appearance of a defect in the belly of the muscle or in the tendon and the subsequent development of ecchymosis makes the diagnosis more certain.

Among diagnostic aids, if the lesion is not accessible, should be mentioned the lightly exposed roentgenogram which shows the soft tissues, electrical stimulation and the local injection of procaine hydrochloride. The former often shows a defect in the shadow cast by the muscle and may reveal a small chip of bone attached to a tendon that has been torn from its insertion. The faradic current, when applied to a muscle, causes it to contract, with the production of pain at the site of a tear in the muscle or its tendon. The use of procaine to test muscular function, with pain eliminated, should not be overlooked in solving those cases presenting a difficult differential diagnosis.

From our statistical study it appears that in the upper extremity the supraspinatus muscle or tendon is the most likely to be torn, while in the lower extremity the quadriceps is most vulnerable (table 1). Senility appears to play a more important rôle in the former than in the latter condition. In view of the prevailing belief that a degenerative process is a prerequisite of the rupture of a muscle or tendon, it was interesting to find

that the average age of the patients in our series was 42 years, which corresponds to that period in which the greatest activity is associated with the onset of degenerative changes (fig. 3). In our series of 100 patients, eighty-three were males, which fact can be attributed to the predominance of men in those branches of industry which require violent muscular effort and entail the risk of falls and other injuries.

The rôle of acute trauma seems to be much greater than all other causes of injury to muscles, including age, disease and chronic trauma. The most common mechanism producing injury to a muscle or tendon was the sudden application of a stretching force to a muscle that was contracting strongly (table 2). Spontaneous rupture was relatively rare. The treatment must be shaped to fit each situation, depending on the site, nature and severity of the injury. In general, a complete rupture should have an early operative repair, whereas in a case of partial tear immobilization may be sufficient.

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REVERSED COLLES FRACTURE WITH SPECIAL REFERENCE TO THERAPY

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The extraordinary increase in bodily injuries within the past few years warrants frequent reviews of the knowledge of trauma therapy, to bring about a more accurate evaluation of all available information and its wider dissemination. Fractures about joints occupy an exceptionally important place in such a review. Because of the prehensile functions of the hand, fractures about the wrist have rightfully attracted a great deal of attention, thought and therapeutic endeavor. The importance of the typical Colles-Pouteau or Dupuytren fracture has been stressed by numerous authors recently, as well as in former years, but very little can be found in medical writings about the reverse Colles fracture or the so-called Smith fracture. It is true that this type of fracture, the characteristics of which will be elucidated later, is not frequently encountered. Nevertheless the surgeon should be familiar with the nature of this lesion, as it must be reckoned with from time to time.

The available literature at present is scanty, and though the etiology and pathology have been thoroughly discussed, no remarks about therapy can be found with the exception of the following statement: "Reduction should be performed under anesthesia similar to the type of reduction utilized in Colles fracture, except that the force is applied in the reverse direction."

The reverse Colles fracture is a flexion fracture and is most frequently the result of a fall on the dorsum of the hand while the hand is in flexion, causing displacement of the distal fragment anteriorly. The line of fracture through the radius is usually oblique, forming a distal triangular fragment with its base on the anterior surface of the radius and its apex on the dorsal surface of the bone. Occasionally the line of fracture will be transverse or almost so, forming a more or less square distal fragment. The characteristic feature of the fracture is, of course, the anterior displacement of the distal fragment, creating a deformity aptly described by Roberts as a "gardener's spade" hand.

With this fracture there may be associated injuries to the adjacent bones, such as fractures of the ulnar, styloid, navicular or lunate bones. The clinical manifestations are at times difficult to interpret and a reverse Colles or Smith fracture may be confused with a forward dislocation of the carpus (exceedingly rare), dislocation of separate carpal bones and Madelung's disease. Edema of the soft tissue frequently obscures the landmarks so that only roentgenograms will finally clinch the diagnosis. Functionally, motion is greatly impaired at the wrist joint; extension suffers considerably more than flexion, which is exaggerated. The present-day recorded concepts on the matter are based on reports of Smith, Callender and Roberts.

In 1854 Robert William Smith[1] in his textbook devoted a page to the description and discussion of a case. The patient had fallen on the back of the hand many months before. After the fall, a deformity had occurred at the wrist. This was characterized by a dorsal tumor, by the distal projection of the end of the proximal radial fragment and by a palmar swelling formed by the lower radial fragment. No remarks were made as to treatment.

In 1865 George W. Callender[2] reported several cases. The first was of a woman, aged 51, with a four weeks old fracture of the right radius. Typical deformity was present; flexion was exaggerated, but extension of the hand was limited. The second case was that of a man who had fallen on the flexed hand. Typical deformity was present. Attempts at reduction were unsuccessful. Callender says: "No crepitus could be detected, nor could I in any way reduce or lessen the deformity." Ten months later the deformity was still present. Two museum specimens showing this fracture are also presented.

Following this, the next publication was that of John B. Roberts[3] in 1897. Twenty-four cases were presented in that paper. Our analysis of the cases revealed that only three were from the author's own experience. They were all old cases, and no reduction was obtained in any of them. Nine cases were culled from the literature, but the sources were not mentioned nor the cases described. The other twelve cases were collected by correspondence with contemporary surgeons. Again, details as to cure or adequate reduction were withheld.

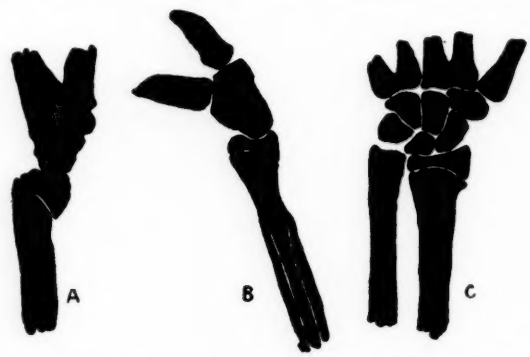

Fig. 1 (authors' case).—*A*, before reduction; *B*, following open reduction; *C*, anteroposterior view following reduction.

Roberts was able to find thirty-one museum specimens demonstrating the fracture, showing that the lesion was by no means a great rarity. In eleven of his twenty-four cases it was definitely established that the injury had

1. Smith, R. W.: A Treatise on Fractures in the Vicinity of Joints, Dublin, Hodges and Smith; New York, Samuel and William Wood, 1854.
2. Callender, G. W.: Fractures Injuring Joints, St. Bartholomew Hosp. Rep. **1**, 1865.
3. Roberts, J. B.: Am. J. M. Sc. **113**: 10, 1897.

been sustained on the back of the hand. The typical clinical changes and deformity were described.

In 1905 appeared a second article by Dr. Roberts.[4] The type of deformity was again described and the name of "gardener's spade" hand attached to it. The author considered closed reduction to be the treatment of choice.

In 1902 Bennet[5] recognized and described a case of reversed Colles fracture, which likewise did not yield to closed methods of reduction.

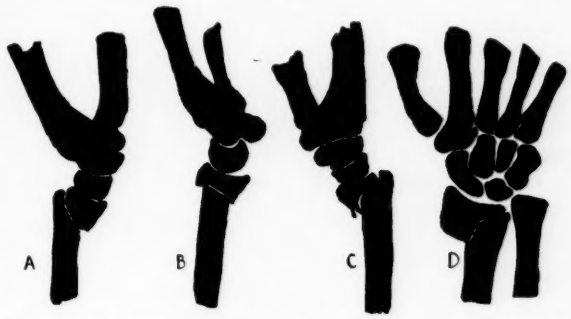

Fig. 2 (Dr. Gaston's case).—*A*, before reduction; *B*, following closed reduction; *C*, one week after reduction—recurrence of displacement; *D*, anteroposterior view of wrist at dischage, one week after closed reduction.

It must be emphasized at this juncture that not one successfully reduced fracture of this type had as yet been reported at the time of Roberts' article in 1905. At the present time, the prevailing opinions as to the manner of injury, as given in the various textbooks on fractures, are not dissimilar from views expressed by Roberts. These statements occur in Key and Conwall, Scudder,[6] Wilson and Cochrane,[7] Lewis Stimson,[8] Kellogg Speed[9] and Cotton.[10] These various textbooks note the uncommonness of the lesion and suggest reduction by manipulation under anesthesia.

The following case report is one of an anteriorly displaced distal radial fragment treated in the Third Surgical Service of the Coney Island Hospital:

A. R., a boy, aged 15 years, while playing football, fell backward, striking his wrist. Immediate pain and disability about the wrist were noted and the patient was brought to the hospital. Physical examination on admission revealed diffuse swelling about the wrist. The distal end of the radius was tender.

Roentgen examination on admission revealed a complete oblique fracture of the distal and anterior aspect of the lower end of the radius, with the distal fragment and radial epiphysis displaced anteriorly (fig. 1 *A*). Closed reduction, under anesthesia, was attempted but could not be accomplished in spite of expenditure of considerable force and manipulation. The roentgenographic appearance was unchanged after the closed reduction. The following day open operation was resorted to, the impacted fragments were pried apart by a chisel and reduction was then accomplished. Maintenance of the reduced fragment was obtained by use of a light plaster cast (fig. 1 *B*).

Two other cases of this type of fracture were encountered in our service at the Coney Island Hospital. Neither one of these could be reduced by closed methods, so open operation had to be resorted to.[11] Dr. J. M. Morehead permitted us to include a case in which he operated at the Post-Graduate Hospital, New York, several years ago, in which the typical changes, both roentgenologic and clinical, were evident and in which attempted closed reduction was likewise unsuccessful. Here, operative reduction was also employed with excellent result.

With the permission of Dr. J. H. Gaston of the Reconstruction Hospital, New York, we are able to present illustrations of another typical case of Smith fracture (fig. 2) reduced by him by closed manipulation. Six days later, however, recurrence of the displacement and deformity were noted by Dr. Gaston and operative intervention was contemplated. Dr. Gaston stated in a personal interview that, in a second similar case of his, closed reduction was likewise unsuccessful.

In view of the absence of authentic reports wherein closed reduction was accomplished and maintained and of our personal experience with this type of fracture, we feel that the reverse Colles fracture is in the majority of instances an irreducible fracture if only closed manipulation is attempted and that for some unaccountable reason it will yield only to open intervention. We feel, however, that closed manipulation should always be attempted first but that failure to succeed by this method is to be expected. We realize that the number of cases involved is too small to make any real statistical deduction.

Nevertheless, because of the uncommonness of this injury, one must needs deal with a small number of cases. It is very suggestive that in virtually all the cases cited in the early literature not one reduction was accomplished. This represents six reported cases: one of Smith's, two of Callender's and three of Roberts'. It is equally important that in our three cases and the three cases courteously communicated to us by Drs. Morehead and Gaston, not one could be successfully reduced without open operation.

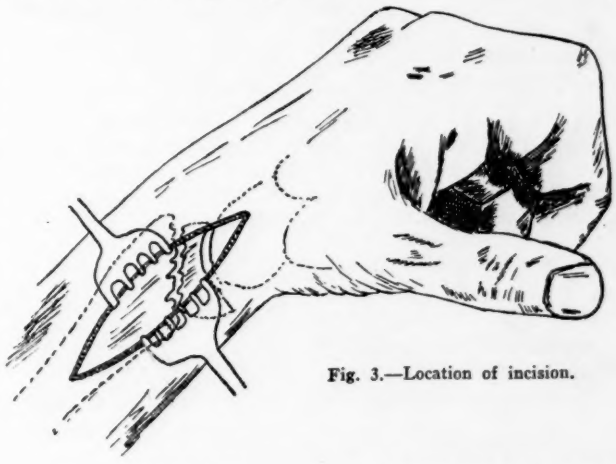

Fig. 3.—Location of incision.

The technic of the operation is simple (fig. 3). The incision is placed on the radial aspect of the wrist immediately proximal to the distal wrist fold, extending about 6 cm. up the radial shaft. The superficial fascia is split the whole length of the incision. The veins of the plexus about the wrist are ligated, the tendons being retracted either anteriorly or posteriorly. The fracture line lies exposed in the depth of the wound. An osteotome is inserted between the fragments, and the impaction, if one is present, is broken up. The hand is then forcibly extended, the osteotome being used as an inclined plane on which the distal fragment slides. To facilitate this sliding motion, the osteotome

4. Roberts, J. B.: Med. Rec. **67**, 1905.
5. Bennet, E. H.: Dublin J. M. Sc. **113**: 242-244, 1902.
6. Scudder, C. L.: Treatment of Fractures, ed. 10, Philadelphia, W. B. Saunders Company, 1926.
7. Wilson, P. D., and Cochrane, W. A.: Fractures and Dislocations, Philadelphia, J. B. Lippincott Company, 1925.
8. Stimson, L. A.: A Practical Treatise on Fractures and Dislocations, Philadelphia, Lea and Febiger, 1917.
9. Speed, Kellogg: Fractures and Dislocations, Philadelphia, Lea and Febiger, 1916.
10. Cotton, F. J.: Dislocations and Joint Fractures, Philadelphia, W. B. Saunders Company, 1924.
11. The histories and roentgenograms of these two cases were filed under Colles fractures and the authors were unable to locate them for detailed presentation.

is rotated in an arc corresponding to the motion of the reduction. Because of the pronounced tendency to recurrence of the deformity, overcorrection of the reduction is desirable. With the wrist held in hyperextension, the fascia and skin are sutured in layers, and a light circular cast extending up to the metacarpophalangeal joints is applied. From ten to fourteen days later this cast may be split, the posterior shell being removed for massage and baking. Active motion of the joint should be begun about the eighteenth to the twentieth day. The type of immobilization following operative reduction should be carefully considered. We have found the cock-up position in a light plaster cast to be the best so far.

As in all injuries in close proximity to joints, immobilization over a long period of time is undesirable. Physical therapy and motion should be begun early. In this connection it is important to realize, however, that the reversed Colles or Smith fracture has a marked tendency to recurrence, and active manipulation of the injured member should be undertaken with great care.

SUMMARY

1. The reversed Colles fracture is not uncommon.

2. No cases of successful reduction of the described fracture, by the closed method, have been reported in the literature.

3. The fracture is therefore considered irreducible and operative reduction is advisable.

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TAR CANCER OF THE LIP IN FISHERMEN

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The problem of tar cancer in fishermen was brought to my attention by an interesting case observed in the surgical wards of the Peter Bent Brigham Hospital. A brief summary of this case follows:

R. C., a healthy-appearing laborer, aged 41, admitted in September 1932, had a moderately painful swelling of the right side of the neck which had been present for six months. This was at first taken to represent tuberculous lymphadenitis, and the patient was treated for a month in the outdoor department

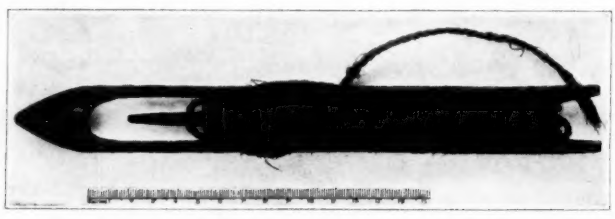

Fig. 1.—The needle used by fishermen in repairing nets.

with the ultraviolet lamp. Since there was no improvement he was sent into the hospital, where a mass of hard adherent tissue was removed, which proved microscopically to be epidermoid carcinoma involving the lymph nodes and invading the submaxillary gland. The primary source of the growth, however, was obscure, since there was no discernible lesion about the mouth. Finally the chance observation of a very tiny puckered scar on the right side of the lower lip, which had been overlooked on previous examinations, led to the following interesting story:

From the Cancer Commission of Harvard University and the Surgical Service of the Peter Bent Brigham Hospital.

The patient had been employed as a fisherman for a period of six years up to three years before his admission. During this period he had used tarred nets exclusively, and in mending these nets he had been in the habit of holding the tar-smeared wooden needle between his lips on the right side of his mouth. Thus during each fishing voyage there would be, for several weeks at a time, a smudge of tar on the lips at this point. At the point of this irritation there developed a small, hard, nontender growth on the lower lip which, he was told by his

Fig. 2.—Tar warts on both hands of a net-loft worker, aged 56, who had been handling tarred nets for forty years.

mates, was a "fisherman's sore." On the advice of his captain he placed himself in the care of a cancer charlatan. The lesion was treated with salves for about two weeks, when it disappeared and did not return. He had smoked a pipe but was very certain that he always held it on the left side of the mouth.

The patient was given a course of roentgen therapy to the neck, but a recurrence soon appeared and he died five months later with an esophageal fistula.

On the basis of this story an investigation was made into the industrial hazard involved in this use of tar by fishermen.

FREQUENCY OF SKIN CANCER IN FISHERMEN

Statistical studies have clearly demonstrated that fishermen are prone to develop skin cancers.[1] This high occupational incidence has been generally attributed to exposure to the sun, and but scant consideration has been given to the possibility that contact with tar might be a contributing factor.

In this country there are no statistical sources through which the incidence of skin cancer among fishermen can be accurately determined. In the course of this investigation, however, a large number of fishermen were interviewed in the various centers of the Massachusetts fishing industry — Boston, Gloucester, New Bedford and Provincetown—and in this way certain definite impressions were gained. Cancer of the lip was found to be common, and it was an interesting fact that almost all these cases, after the diagnosis had been made by local physicians, had been treated by the same woman who had treated my original patient, R. C., three years before he came under my observation. This cancer charlatan was known to most of the older fishermen from Gloucester to New Bedford, and her treatment by salves was considered by them to be

1. Young, M., and Russell, W. T.: An Investigation into the Statistics of Cancer in Different Trades and Professions, London, H. M. Stationery Office, 1926. Haagensen, C. C.: Occupational Neoplastic Disease, Am. J. Cancer **15**: 641 (April) 1931. Hoffman, F. L.: The Cancer Death Rate in Selected Occupations, American Academy of Medicine, 1915.

more efficacious than the radium or surgery advised by the physicians.

This charlatan was visited in the course of the investigation. She proved to be an elderly woman who seemed to have a very accurate idea of the gross pathology of cancer of the lip. She stated that she had treated several hundred fishermen for this condition during the past twenty-five or thirty years.

EXPOSURE OF FISHERMEN TO TAR

Tar is employed extensively in the fishing industry, being used on the nets to prevent rotting. It becomes smeared on the hands and arms of the fishermen, particularly in hot weather when the tar is soft, and it is then carried by the hands to the face. Moreover, it is a common practice to hold the large wooden shuttle-like "needle" (fig. 1) in the mouth while the nets are being mended. The needle soon becomes smeared with the tar, which is thus carried onto the lips.

The men who are most constantly exposed to tar are those who work in the "net lofts," where the nets are repaired and retarred. Two of these establishments were visited in Gloucester, each employing three or four men. It was found that the older workers who had been exposed to the tar for many years showed typical tar warts on the hands and forearms (figs. 2 and 3). None had cancer, but they recalled that three of their predecessors, who had been engaged in the business for similarly long periods, had suffered from skin cancers. One was said to have had several cancers involving the cheek and lower lip, all successfully treated with radium. The other two died from cancer of the lip. All of these had been accustomed to hold the needle in the mouth while mending the nets, and it was definitely known that at least one of these had never used tobacco in any form.

Fig. 3.—Tar wart on the forearm of a net loft worker, aged 75, who had been handling tarred nets for sixty years.

It is well known that the carcinogenic properties of the various kinds of tar varies widely; wood tar is apparently innocuous, whereas coal tar has been widely incriminated. Of the various types of coal tar the most highly carcinogenic is that which is produced as a by-product in the destructive distillation of coal to form coal gas. This distillation is carried out in either the horizontal retort or in the vertical type of retort. The tar produced in the old fashioned and relatively inefficient horizontal types comes off at a much higher temperature and contains more carcinogenic agents than that produced in the vertical type.[2]

Although pine tar is used to some extent on fishing nets, by far the bulk of the tarred nets are treated with coal tar. An investigation into the source of this tar revealed that it is obtained from local gas works that employ the horizontal type of retort. Thus it is seen that the tar to which the fishermen in the Massachusetts area are exposed is the most potent carcinogenic variety known.

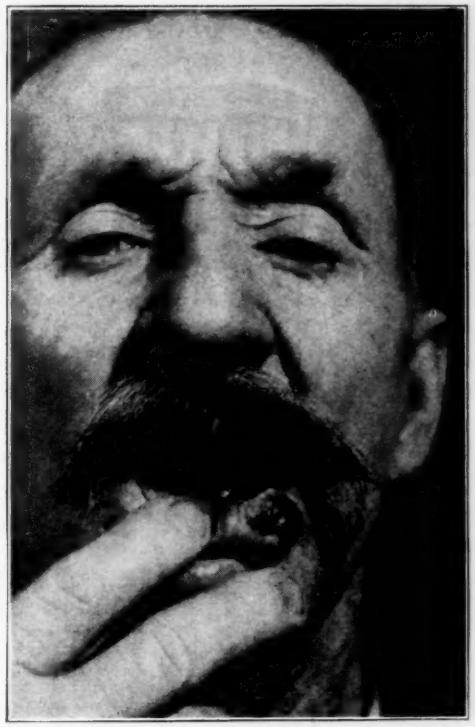

Fig. 4 (case 2).—A fisherman, aged 77, who developed an epidermoid carcinoma on the lip at the site where he habitually held the needle in repairing tarred nets. (He was a pipe smoker but always held the pipe in the right side of his mouth.)

It is interesting that the fishermen themselves appreciate the difference between the coal tar and the pine tar. The latter they recognize as healing and frequently apply it to their minor abrasions or hemorrhoids. On the other hand, they complain bitterly of the coal tar, which is especially troublesome in hot weather, when it causes an intense burning of the skin. It also causes an irritative condition on the forearms which they call "pinginits"; evidently a pustular folliculitis, similar to the condition described by Schamberg[3] as occurring commonly among workers in a tar paper plant.

TAR CANCER IN FISHERMEN

In spite of this exposure to carcinogenic tar there is but little mention in the literature of the occurrence of tar cancer in fishermen. Young and Russell[1] mention a relatively high incidence of cancer of the ear in fishermen and suggest that this might be due to tar. Bridge and Henry[4] in 1928 reported two cases of tar cancer attributed to net fixing, and since then four additional cases have been reported to the British Factory Department.[5] The lesions in these six cases were situated on the scrotum (two cases), forearm, hand, ear and neck. It would appear rather surprising that none of these cases were lip cancer, since the habits of net repairers

2. Kennaway, E. L.: On Cancer-Producing Tars and Tar Fractions, J. Indust. Hyg. **5**: 462 (April) 1924. Heller, Imre: Occupational Cancers, J. Indust. Hyg. **12**: 169 (May) 1930.

3. Schamberg, J. F.: Cancer in Tar Workers, J. Cutan. Dis. **28**: 644, 1910.

4. Bridge, J. C., and Henry, S. A.: Industrial Cancers, Report of the International Conference on Cancer, London, 1928, p. 258.

5. Henry, S. A.: Personal communication to the author.

must be more or less the same in England as in this country. A possible explanation is that when cancer of the lip has occurred in net fixers it has been attributed to causes other than tar, with the result that these cases have not found their way into the aforementioned statistics.

In an effort to determine the etiologic importance of tar in cancer of the lip a study was made of the cases of cancer of the lip treated at the Collis P. Huntington Memorial Hospital, Boston, during the years 1932 and 1933. One hundred and forty-one cases were investigated by questionnaire. There were seventy-nine replies, and in this number there were four who had been employed as fishermen. All four of these men had used tarred nets, and one volunteered the information that he had always held the needle in the same side of his mouth on which the sore appeared (fig. 4). This man had never used tobacco, while the remaining three were pipe smokers. However, in two of these the lesion had developed on the side of the mouth opposite from the site of holding the pipe.

sure to tar was probably the important factor in these particular cases, especially so in view of the practice of holding the tar smeared needle in the mouth.

The causative rôle of pipe smoking, in spite of its generally accepted importance, has not been definitely established. Although pipe smoking is common in patients suffering from lip cancer, there is little evidence that it is more common than in the general male populace of a similar age group. Moreover, the few available reports that include statistics as to the site of holding the pipe do not show an increased tendency for cancer to develop at this site.[6] This point was particularly investigated in our analysis of the cases of lip cancer treated at the Collis P. Huntington Memorial Hospital in 1932 and 1933. There were seventy-nine replies to the questionnaire. Of these, sixty patients, or 76 per cent, had been pipe smokers. However, of these sixty pipe smokers, the lesion had developed on the same side as the site of holding the pipe in only thirty-four, or 56 per cent. In the eight cases of tar cancer of the lip here reported, two used no tobacco at all, while six were pipe smokers. Of these six, however, four held the pipe on the side opposite from that on which the lesion developed.

Cases of Tar Cancer of the Lip in Fishermen

Case	Patient	Age	Duration of Exposure	Nature of Exposure	Location of Cancer	Diagnosis	Source of Case
1	R. C.	41	6 years	Tarred needle held in mouth	Right lower lip	Epidermoid carcinoma (microscopic)	Peter Bent Brigham Hospital
2	D. D.	77	60 years	Tarred needle held in mouth	Left lower lip	Epidermoid carcinoma (clinical)	Collis P. Huntington Hospital
3	J. F.	62	10 years	Repairing tarred nets	Middle half, lower lip	Epidermoid carcinoma grade 2 (microscopic)	Collis P. Huntington Hospital
4	E. H.	70	5 years	Tarred nets in lobster pots	Midline of lower lip	Epidermoid carcinoma (clinical)	Collis P. Huntington Hospital
5	J. S.	73	10 years	Repairing tarred nets	Midline of lower lip	Epidermoid carcinoma grade 2 (microscopic)	Collis P. Huntington Hospital
6	B. F.	61	40 years	Tarred needle held in mouth	Left lower lip	Epidermoid carcinoma grade 2 (microscopic)	Massachusetts General Hospital
7	F. W.	56	30 years	Tarred needle held in mouth	Right lower lip	Epidermoid carcinoma (clinical)	Observed at Boston Fish Pier
8	C. M.	72	56 years	Repairing tarred nets	Right lower lip	Epidermoid carcinoma (clinical)	Observed at Gloucester

The cases of cancer of the lip in which tar seemed to have played an etiologic rôle are given in the accompanying table. In addition to these eight cases there were others indirectly brought to my attention, including the two cases, previously mentioned, of fatal cancer of the lip in net loft workers.

COMMENT

Although it is felt that exposure to tar may be a factor in the high incidence of cancer of the lip in fishermen, it is certainly not the only factor involved. The outdoor life and exposure to the sun is probably a more important cause, and in addition the etiologic rôle of pipe smoking must of course be considered.

A statistical analysis of 750 deaths from lip cancer in England and Wales from 1911 to 1913 showed a death rate of 79.8 per million years of life among agricultural laborers and 55.0 per million among farmers as compared to only 21.2 per million among all occupied and retired males.[6] Fishermen are probably even more exposed to the irritating action of sun and wind than are farmers. They almost universally complain of the susceptibility of the lower lip to sunburn and some wear an overhanging moustache for its shading effect on the lower lip. The fact, however, that cancer of the lip was found to occur in many net loft workers who remain largely indoors and several of whom were not pipe smokers would indicate that exposure to tar was probably the important factor in these particular cases, especially so in view of the practice of holding the tar smeared needle in the mouth.

One might expect that fishermen would develop tar cancer on the arms and hands more frequently than on the lip, since the former are necessarily more constantly exposed to the tar. Although tar warts of the hands and arms were observed in several net loft workers, only one case of cancer of the arm was brought to my attention, and the impression was gained that this must be rare. This high incidence of lip cancer is, however, in accord with the observations of those who have investigated tar and pitch cancer in other industries[7] and is probably due to the relatively high vulnerability of the lip to cancerous changes. Moreover, in fishermen there is the added factor of direct contamination of the lip by the tarred needle, which is not present in the industries investigated by other writers.

SUMMARY

1. Fishermen in the Massachusetts region are exposed, in the handling and repairing of tarred nets, to the most strongly carcinogenic type of tar; namely, horizontal retort gas-works tar.

2. The lips are especially apt to be contaminated with the tar owing to the frequent practice of holding the tar-smeared needle in the mouth while repairing the nets.

6. Lane-Clayton, Janet E.: Report on Cancer of the Lip, Tongue and Skin, London, H. M. Stationery Office, 1930.

7. Kennaway, E. L.: The Anatomical Distribution of the Occupational Cancers, J. Indust. Hyg. **7**: 69 (Feb.) 1925.

3. In eight cases of cancer of the lip in fishermen here reported it is believed that such an exposure to tar was an important causative factor.

4. These observations suggest that exposure to tar may be partially responsible for the apparent high incidence of cancer of the lip in fishermen.

THE TREATMENT OF MALARIA WITH SMALL AMOUNTS OF QUININE

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From time immemorial the physician has been inclined to prescribe, and the patient to take, quinine only so long as fever continues. Since the organization of malaria campaigns, the malariologist has been concerned over the frequency of relapse—not always distinguished from reinfection—and has tended to combine the treatment of the acute attack with the prevention of relapse. He has therefore encouraged longer and longer treatments, hoping thereby to obtain a radical cure.

This tendency culminated, in the United States, in the "standard treatment," developed by Bass and recommended by the National Malaria Committee, in which intensive treatment was given for two months. Bass [1] stated that most patients will relapse after treatment of a week or less but that 100 per cent of cases would be cured with daily treatment for three or four months.

Recent researches, however, especially in therapeutic malaria, are giving new light on the natural history of the disease and are changing the conceptions of treatment. The Malaria Committee of the Health Section of the League of Nations [2] gives the usual course of an infection as follows: The cure of the primary attack by quinine treatment is followed by a period of two months in which one or more recrudescences may occur. Then comes a period of from seven to ten months of probable freedom from fever, followed by a probable reappearance of fever and parasites, but with complete recovery in a year. To distinguish between subsequent attacks of fever, James [3] has recommended the following nomenclature:

Recrudescence: Return of fever within eight weeks after subsidence of initial attack.

Relapse: Fever between the eighth and twenty-fourth weeks.

Recurrence: Fever after the twenty-fourth week.

This separation is useful for malariologists; but to avoid confusion the word "relapse" should be retained as a general term, and another used for the special meaning that James gives it. We would suggest the term "recidivation" for the return of fever between the eighth and the twenty-fourth week after the initial attack.

Sinton,[4] whose work on treatment is fundamental, reports that in 251 probably fresh (new) infections, treated with varying doses of drugs from one week to six weeks, the recrudescence rate was 24 per cent, while in 667 chronic cases treated from ten to fifty-six days with from 16 to 56 Gm. of quinine, or of quinine plus alkali, there were recrudescences in 68 per cent. Sinton says "the evidence is very strong that the former [fresh] infections are more easily cured than the latter [chronic] infections."

Fletcher [5] found that the average number of days of quinine treatment necessary to control the fever was 3.5 in quartan, 4.8 in benign tertian, and 4.7 in malignant tertian infections, but to cause the disappearance of parasites from the peripheral circulation 8.7 days of treatment was necessary in quartan, 4.5 in benign tertian, and 6.6 days in malignant tertian malaria.

James [3] was able to infect patients with one strain of Plasmodium vivax after another strain had failed to produce infection. Swellengrebel,[6] whose fifteen Dutch volunteers all had relapses after treatment with 1 Gm. of quinine plus 0.03 Gm. of plasmochin daily for fourteen days, used the Madagascar strain of Plasmodium vivax commonly employed by James. He contrasts these results with those of Piebenga, who successfully prevented relapse in sixty-seven persons who had contracted malaria naturally in Holland (local strain of Plasmodium vivax) and were given the same treatment.

Lowe [7] observed sixteen persons with untreated benign tertian malaria who probably had acquired a certain amount of immunity from previous attacks years before; he found that eleven had spontaneous arrest in an average period of six days. Among twenty-nine other patients treated with 1.65 Gm. of cinchona febrifuge daily for a week, there were no relapses in six months. In twenty-one Plasmodium falciparum infections it was necessary to give quinine within forty-eight hours to control the attack.

On the other hand, Caccini in 1902 found that all except one of 120 Plasmodium vivax untreated infections relapsed. Of 145 Plasmodium vivax infections treated early and systematically, a relapse occurred in 37 per cent. By systematic treatment Caccini meant giving from 1.5 to 2 Gm. of quinine on alternate days for seven days. In 102 patients treated daily for a week with from 1.5 to 2 Gm. of quinine daily, relapse occurred in 15 per cent. Some of Caccini's patients were observed for as long as nine months. Evidently the strains of Plasmodium vivax observed by Caccini and James and Swellengrebel were more virulent than those of Piebenga and of Lowe.

It would seem, therefore, that in the treatment of malaria one should take into account the species of parasite, the virulence of the local strain, whether infection is recent or chronic, and the amount of immunity that the patient may have acquired. A treatment that is adequate in one region may not be so in another.

The studies on which this report is based were made under the auspices and with the aid of the International Health Division of the Rockefeller Foundation.

1. Bass, C. C.: International Conference on Health Problems in Tropical America, Boston, United Fruit Company, 1924, p. 85.

2. Health Committee, League of Nations, Quart. Bull. Health Organ., League of Nations **2**: 197-300, 1933 (French edition).

3. James, S. P.: Some General Results of a Study of Induced Malaria in England, Tr. Roy. Soc. Trop. Med. & Hyg. **24**: 478-525 (March) 1931.

4. (*a*) Sinton, J. A.: Indian J. M. Research **13**: 565-577 (Jan.) 1926; (*b*) ibid. **18**: 831-844 (Jan.) 1931; (*c*) ibid. **18**: 845-853 (Jan.) 1931. (*d*) Sinton, J. A., and Bird, W., ibid. **16**: 725-746 (Jan.) 1929. (*e*) Sinton, J. A.; Smith, S., and Pottinger, D.; ibid. **17**: 793-814 (Jan.) 1930.

5. Fletcher, W.: Notes on the Treatment of Malaria with the Alkaloids of Cinchona, London, 1923, quoted by Sinton, references 4 *b* and 4 *c*.

6. Swellengrebel, N. H.: Tr. Roy. Soc. Trop. Med. & Hyg. **25**: 114-115, 1932; Proc. Roy. Acad. Sc., Amsterdam **34**: 1216, 1932; Malaria in Deltas, Health Committee, League of Nations, Health Organization, Malaria, 1933, p. 208.

7. Lowe, J.: Indian M. Gaz. **69**: 16-23 (Jan.) 1934; abstr. Trop. Dis. Bull. **31**: 420, 1934.

Nocht has stated that "quinine therapy is never a 'therapia magna sterilisans.'" The work of James, and of Boyd,[8] Lowe and others, has shown that in some cases spontaneous regression of symptoms will take place even without treatment. Other cases will yield to a very small amount of quinine, while others, as Sinton has shown, will relapse later no matter what method of treatment is followed. Yorke [9] also states that the amount and duration of treatment have no influence on whether or not a relapse will occur. In the experience of Nicol,[10] no known method of quinine treatment is effective in preventing relapses in induced malaria. It seems logical, therefore, to concentrate on the cure of the acute attack and later treat the recrudescences, recidivations and recurrence if and when they occur.

Collins [11] treated two groups of patients with a long (Seiffert) and a short method (1 Gm. daily for three or four days). Aside from the difficulties inherent in supervising a treatment lasting for seventy-seven days, he found but little advantage in the long treatment. While the number of recrudescences was less after the long treatment than after the short treatment, it appears that the number of recurrences the following year was greater among those who had received the long treatment. Patients receiving the short treatment tended to remain free from subsequent attacks longer than those given prolonged treatment.

Rogers [12] holds that the vast majority of malarial cases will yield within from five to seven days to oral quinine in 2 Gm. daily doses. Sinton [13] recommends 2 Gm. of quinine daily for seven days, which he says will cure 70 per cent of fresh infections, without regard to the species of parasite. He considers that 1.3 Gm. a day is usually adequate when Plasmodium vivax is the common species.

The present tendency, thus, is toward shorter treatments. The Malaria Committee of the Health Section of the League of Nations [2] recommends as a minimal treatment in benign tertian malaria 1 Gm. of quinine hydrochloride daily for five days. The opinion of the committee is that larger doses over longer periods are not more efficacious than shorter courses of treatment.

On the basis of the observations that we are reporting here, we have become convinced that with the strains of Plasmodium vivax with which we are dealing locally and in the absence of a large percentage of Plasmodium falciparum infections, a small amount of quinine is practically as efficacious as a long course of treatment. The saving of quinine is of course very considerable, and administration is greatly simplified.

MATERIAL AND METHODS

In 1931 a malaria station was established in Campo Lugar, Spain, to test the value of an antilarval campaign under local conditions. A malaria dispensary was opened to ascertain the amount of malaria occurring. To interfere as little as possible with the natural malaria transmission, and at the same time attract patients to the laboratory, we wished only to control the acute attack. It was decided to give, as an adult dose, 1 Gm. of quinine sulphate daily for four days, a total of 4 Gm. While the dispensary operated during 1931, no antilarval measures were begun until 1932.

In analyzing our cases at the end of the first year, we found that most of the recrudescences had occurred in the spring recurring cases. Only about 15 per cent of the new infections recrudesced. The experience of the two subsequent years has confirmed our first year's observation.

Campo Lugar is a town of 1,200 inhabitants, with a stable population. The patients on whom we are reporting are all residents of the town and are known to us personally. We have thus been able to follow our cases carefully, and we believe that our statistics are as reliable as they can be under field conditions.

In 1931 about 15 per cent of the total population had new infections, this percentage being reduced to 7 in 1932 and to 2 in 1933. It is unlikely, therefore, that there were many cases of reinfection during any one year or that many of what we have called recrudescences were really new infections. There is, however, the possibility of reinfection, since the town was not entirely free from malaria. However, any error is on the conservative side, since the classification of a case as a relapse instead of a new infection makes the test of treatment more severe.

Schedule of Treatment

Age	Daily Dose in Grams
0-1	0.10 tannate, in cholocate tablets
1-2	0.20 tannate, in chocolate tablets
3-4	0.30-0.40 sulphate, candy coated pills
5-8	0.50-0.60 sulphate, in tablets
9 and up	0.75-1 sulphate, in tablets

Since this has always been a region of endemic malaria, a certain number of the inhabitants had also had previous attacks of malaria. We have no way of estimating this percentage, but there must have been some degree of acquired immunity.

The finding of parasites in the peripheral blood by the thick film method was the sole criterion for the diagnosis of malaria. For such patients the accompanying schedule of treatment was used, both in original and in subsequent attacks.

The duration of treatment was uniformly four days. The entire dose was given to the patient to be taken on his own responsibility. We believe that the total amount was usually taken. If it was not, our results are better than we report. Succeeding examinations for recrudescences and relapses were made at irregular intervals until 1933, when all cases were followed throughout the season on a regular schedule. If a recrudescence occurred, the routine treatment was repeated.

RECRUDESCENCES OF OLD AND NEW INFECTIONS

In 1931 there were eighty-six Plasmodium vivax infections, seen before June 1, in persons with a history of malaria in 1930; hence these infections were almost certainly recurrences from the previous year. Fifty of the infected persons, or 59 per cent, had more than one attack (recrudescence) during the year. After July 1 there were at least 137 Plasmodium vivax and thirty-seven Plasmodium falciparum infections, which

8. Boyd, M. F.: South. M. J. **27**: 155-159 (Feb.) 1934. Boyd, M. F., and Stratman-Thomas, W. K.: Am. J. Hyg. **17**: 55-59 (Jan.) 1933; 666-685 (May) 1933.
9. Yorke, W.: Tr. Roy. Soc. Trop. Med. & Hyg. **19**: 108-122 (June) 1925.
10. Nicol, W. D.: J. Ment. Sc. **73**: 209-217, 1927, quoted by Sinton.[4]
11. Collins, R. K.: Am. J. Trop. Med. **14**: 329-338 (July) 1934.
12. Rogers, L.: International Conference of Health Problems, Boston, United Fruit Company, 1924, p. 101.
13. Sinton (references 4 *b* and 4 *c*).

were probably new infections. Of the benign tertian cases, twenty-four, or 17 per cent, recrudesced. Of the thirty-seven malignant tertian cases, thirty-three recrudesced after our treatment.

Of the 201 cases seen in 1932, 112 Plasmodium vivax cases were probably recurrences of previous infections. Sixty-six of these (again 59 per cent) recrudesced after treatment. Only six of the seventy-three new Plasmodium vivax infections, or 9 per cent, recrudesced. There were sixteen Plasmodium falciparum infections in 1932, of which three were possibly old infections. Thirteen of these sixteen cases recrudesced.

In 1933, of thirty-three persons with Plasmodium vivax infections recurring from 1932, twenty-four, or 73 per cent, had repeated attacks. We had twenty-four new Plasmodium vivax infections, of which five, or 21 per cent, had showed recrudescences. There were only three Plasmodium falciparum cases, all new infections. All three recrudesced after treatment.

For the three years combined we therefore have the following figures:

Of 234 new Plasmodium vivax infections, thirty-five, or 15 per cent, recrudesced following treatment. But of fifty-three new Plasmodium falciparum cases, forty-six, or 90 per cent, recrudesced following the same treatment.

Of 231 persons with old Plasmodium vivax infections (recurrences from the previous year), 140, or 60 per cent, presented multiple attacks or recrudescences following treatment. The initial attack of the year, or recurrence, takes place in the spring, and the succeeding recrudescences begin within from two weeks to a month but may be continued for two months or more.

The fresh Plasmodium vivax infections, therefore, have but little tendency to recrudesce following a short course of quinine treatment, but of those which recur the following spring approximately 60 per cent will be multiple attacks in spite of treatment. This is no doubt a provision for the perpetuation of the species and explains the appearance of new Plasmodium vivax infections in June, with the peak in the latter part of July.

RECURRENCES OF INFECTION THE FOLLOWING YEAR

Of the 137 new Plasmodium vivax infections in 1931, at least fifty recurred in 1932; of the seventy-three new Plasmodium vivax infections in 1932, at least nineteen recurred in 1933; and eleven of the twenty-four fresh Plasmodium vivax infections of 1933 recurred in 1934, giving a total of at least eighty recurrences in a total of 234, or a minimum of 34 per cent of recurrences the following year. We have eliminated all doubtful cases, so that the actual percentage of recurrences is probably higher.

In fifty-six Plasmodium falciparum infections, however, only three presented possible recurrences the following year. These cases, as already noted, had practically all recrudesced the same year and had received additional treatment. Cámara[14] has noted similar results with a combination of quinine and acetarsone.

DURATION OF INFECTION

We have already seen that, of the 137 persons with new Plasmodium vivax infections in 1931, fifty experienced a recurrence in 1932. Nine of these, or 7 per cent of the original number, again exhibited fever and parasites in the spring of 1933. Similarly there were seventy-three new infections in 1932, of which nineteen recurred in 1933, and four again recurred in the spring of 1934, a percentage of 6.

Furthermore, two other persons, newly infected in September 1932, and examined on more than one occasion in 1933 with negative results, had recurrences early in April 1934.

In all these cases there is of course the possibility of a reinfection in the second year, but a careful study of each case leads us to believe that they are examples of persistence of infection for more than twelve months.

HEMIC AND CLINICAL RELAPSES

In 1933 we followed our cases intensively from the time of the first attack until the end of October, in an attempt to study the relation between parasites in the peripheral circulation and clinical recrudescences. The schedule called for three examinations four days apart, beginning one week after the end of the initial attack, then weekly for the remainder of the month, and monthly thereafter, unless clinical symptoms supervened, in which event an examination was made at once. We divided the recrudescences into two types: (1) clinical, when parasites were found and the patient had fever, and (2) hemic, when there were parasites but no clinical symptoms.

Of the sixty persons found with positive reactions during the year, fifty-eight returned for subsequent examinations more or less in accordance with the schedule. The other two removed from the area. A total of 336 reexaminations were made, an average of more than five examinations per person. The number ranged, however, from three in nine persons to fifteen in one case.

Twenty-six persons gave consistently negative results in a total of 103 reexaminations. In other words, 45 per cent had no discovered clinical or hemic relapses during the season. Seventeen of those negative on reexamination were persons who had had new infections, and two others had probably had recurrences of infections of two years before.

Thirty-two patients were positive sixty-eight times and negative 165 times, in a total of 233 reexaminations. Three of these thirty-two cases were new Plasmodium falciparum infections, five were recrudescences of the twenty-four new Plasmodium vivax infections, and the remaining twenty-four were recrudescences of recurring old infections. Of the latter, eight had only hemic relapses, nine had only clinical relapses, and seven had the two types at one time or another. The same proportion held in the new infections.

If one may judge from the small number of cases, parasites may at times be found in the peripheral circulation in about half the cases without producing clinical symptoms. An extreme case is patient 17, a child, aged 6 years, who was reexamined seven times. On six occasions parasites were found, and the spleen was slightly enlarged, but no rise in temperature was noted at any time.

No parasite counts were made, so that we are not sure that the number of gametocytes present in the circulating blood was sufficient to produce anopheline infection; but it seems probable that some of these patients were infective for considerable periods of time.

14. Cámara, P. de la: Med. de los Paises Cálidos **4**: 426-429, 1931.

COMMENT AND CONCLUSIONS

We have shown that in new Plasmodium vivax infections approximately 15 per cent will recrudesce during the same year, after treatment with 4 Gm. of quinine. In the following year at least 35 per cent will recur. The real percentage is probably higher. This, as many authors have shown, may occur no matter what method of treatment is followed. It would therefore seem unnecessary to give a long course of treatment in fresh infections unless one wishes to reduce the recrudescences to the absolute minimum, which is probably about from 5 to 8 per cent. Considering the difficulties involved in giving and assuring the faithful following of a long course of treatment, it is doubtful whether the results obtained are worth the effort and expense involved, at least in an organized campaign.

In Plasmodium falciparum infections, however, more than 80 per cent of our cases persistently recrudesced following the short treatment. Each recrudescence was treated, so that finally these patients took enough quinine—from 8 to 16 Gm.—to effect a cure, and recurrences the following year were the exception.

On the other hand, in the spring recurrences of old Plasmodium vivax infections, 60 per cent of the patients had multiple attacks following the short treatment. Therefore, quinine treatment in these cases, which are important in the production of the summer epidemic, does not give such good results. A longer treatment might have given a lower percentage of recrudescences, although from Sinton's extensive experience, and that of others, this seems improbable. Some other drug would perhaps give better results in the treatment of the spring relapses.

The foregoing considerations suggest that in Spain new Plasmodium vivax infections may safely be given a short quinine treatment similar to ours; that Plasmodium falciparum infections should be treated for a longer period of approximately twelve to fifteen days, and that in chronic infections, or spring recurrences, one of the newer drugs should perhaps be used.

SUMMARY

A three year trial with a short treatment of 1 Gm. of quinine sulphate daily for four days was made.

Of 234 new Plasmodium vivax infections, 15 per cent recrudesced, and at least 35 per cent recurred the following year.

Of 231 spring Plasmodium vivax recurrences of infections of the previous year, 60 per cent recrudesced following treatment.

Of 56 Plasmodium falciparum infections, 90 per cent recrudesced following the short treatment. The recrudescences were also treated, and only three recurred the following year.

It is therefore suggested that fresh Plasmodium vivax infections need only a short quinine treatment in the region under study but that Plasmodium falciparum infections should be treated for a longer period, while some other drug may be tried for the spring relapses.

49 West Forty-Ninth Street.

Probably Four Eggs a Week.—It is probably in the interests of good nutrition to consume at least four eggs (or egg yolks) per week unless there are reasons to the contrary. More liberal egg consumption is usually practicable and probably advantageous if the combined consumption of meats, fish and eggs is not allowed to become too high.—Sherman, H. C.: Food and Health, New York, Macmillan Company, 1934.

A STUDY OF ONE HUNDRED CASES OF SKULL FRACTURES

FOLLOWED FROM FIVE TO THIRTEEN YEARS

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My purpose in this report is to present a study of the condition of patients several years after a severe skull fracture. An attempt has been made to determine the effect of age, type of skull fracture, and treatment on the ultimate general condition of the patient.

The mortality in a large series of skull fractures treated in this clinic was studied by Dr. B. N. Carter in 1927. He found a total mortality rate of 37.2 per cent in 389 cases irrespective of associated injuries and length of time the patients survived. Excluding the cases that were moribund or obviously hopelessly injured, the mortality rate was 18.1 per cent.

TABLE 1.—*Summary of the Effect of Age on the Hundred Cases Studied*

Age	Cases	Complete Recovery	Partial Recovery	Incapacitated
1-20 years	38	27	10	1
21-40 years	38	22	13	3
41-60 years	18	9	6	3
61-80 years	7	5	2	0

At that time Dr. Carter also outlined the method of treatment employed in the series of patients on which the present report is based. Patients with the following conditions were operated on as soon as practicable: (*a*) compound fractures, depressed fractures, and compound depressed fractures, (*b*) extradural hemorrhage or localized subdural clot, and (*c*) persistent weakness of an arm or leg.

Patients not requiring immediate operation were treated in the following manner: Repeated lumbar punctures were done both as a therapeutic procedure and as an indicator of the degree of intracranial pressure. On the results of this procedure subsequent therapy was based. If the intracranial pressure was

TABLE 2.—*Study of the Effect of the Type of Skull Fracture on the Hundred Cases Studied*

Type of Fracture	Cases	Complete Recovery	Partial Recovery	Incapacitated
Vault	35	25	9	1
Basal	25	13	10	2
Vault and base	21	14	5	2
Extradural hemorrhage	5	3	2	0
Compound depressed fracture	12	7	4	1
Subdural clot	1	0	1	0

controlled by lumbar punctures, they were repeated as often as indicated. Cases of increased intracranial pressure that did not respond to repeated lumbar punctures were treated by subtemporal decompressions.

The 100 patients studied in this report suffered their injuries from five to thirteen years prior to the follow-up examinations. Patients who had no subjective signs or symptoms and no positive physical or neurologic manifestations were considered completely well. Patients who had subjective signs or symptoms or who had positive physical conditions not of sufficient

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seriousness to keep the patient from following his work were considered to have residual symptoms and to be partially cured. Patients who were unable to work because of some disability due to the head injury were considered incapacitated.

Of the 100 patients examined, sixty-three were completely well. Thirty-one had residual symptoms but were able to maintain a reasonably normal life. Six were incapacitated.

Of the thirty-seven partially cured and the incapacitated patients, nineteen had headaches that were severe and frequent enough for the patient to attribute them to the head injury. Fifteen had vertigo, which was brought on by movement of the head. Seven had defective memory. In three a traumatic psychosis developed; in one patient the psychosis disappeared two months after the discharge from the hospital; the other two patients are still confined to a sanatorium. In four, personality changes have developed. Three patients are having the petit mal type of convulsions; two had generalized convulsions, which continued for four years and subsequently stopped; two had generalized convulsions for five years, followed by petit mal seizures, which have persisted now for four years; two other patients were known to have epilepsy before their injuries, and their convulsions have continued. Five patients are still having diplopia associated with weakness of one or more extrinsic eye muscles. Thirty-one patients were bleeding from the ears at the time of admission to the hospital. The follow-up examination of these patients revealed seven with impaired hearing, and all seven had a persistent perforation of the tympanic membrane of the ear. Two of these seven patients had a peripheral facial palsy. Bone conduction was normal in all patients. Seven patients had loss of smell. Neurologic examination revealed six patients with facial palsy of the central type. Three patients exhibited weakness of one side of the body.

With regard to treatment, twenty-six of the hundred patients were operated on; fourteen, or 53.8 per cent, recovered completely; nine, or 34.6 per cent, partially recovered, and three, or 11.6 per cent, were incapacitated. The operations performed were:

1. Subtemporal decompression for sustained high intracranial pressure, eight patients: complete recovery four, partial recovery three, incapacitated one.

2. Débridement and elevation of fragments for compound depressed fracture, twelve patients: complete recovery seven, partial recovery four, incapacitated one.

3. Craniotomy for extradural hemorrhage, five patients: complete recovery three, partial recovery two.

4. Craniotomy for subdural clot, partial recovery, one patient.

Of the seventy-four patients receiving conservative treatment, forty-nine, or 66.2 per cent, completely recovered, twenty-two, or 29.7 per cent, partially recovered, and three, or 4.1 per cent, were incapacitated.

The fact that 37.0 per cent of these 100 patients with skull fractures who were followed over a period of from five to thirteen years showed residual symptoms reveals the seriousness of head injuries. It is possible that these figures are slightly high, owing to the fact that patients with symptoms are more apt to report back to the hospital than are those who are perfectly well.

Of the cases which do not require surgical operations it is my belief that (1) prompt and continued reduction of increased intracranial pressure to normal, (2) bed rest in the hospital for a period of at least three weeks and (3) a long period of physical and mental rest after discharge from the hospital may materially lessen the distressingly high incidence of serious disability following skull fractures.

Clinical Notes, Suggestions and New Instruments

THERAPEUTIC USE OF LOCALIZED ALLERGY

PAUL D. GARVIN, M.D., AND GERALD M. FRUMESS, M.D., DENVER

During the last few years extensive studies have been made on the circulating antibody (atopic reagin) usually present in atopy, as well as the reaction of the sensitized tissue when brought in contact with the atopen.

The discovery by Prausnitz and Küstner [1] in 1921 that the normal skin can be passively sensitized by the intradermal injection of serum containing atopic reagin has been utilized for the diagnosis of atopic conditions. Walzer [2] in 1926 demonstrated that the passive transfer site often reacts in the characteristic manner when the specific atopen is ingested orally instead of injected into the sensitized area.

The histologic picture of the allergic wheal has recently been studied by Kline and his associates.[3] They find that the essential picture is an inflammation of the dermis and subcutaneous tissue, with edema, vascular engorgement and leukocytosis. At first the eosinophilic leukocytes predominate (first hour), but later the polymorphonuclear neutrophilic and mononuclear cells replace the eosinophils.

It occurred to us that advantage might be taken of such an induced inflammatory reaction with its consequent mobilization of defensive agents at a local site in the treatment of indolent ulcers.

Serum containing atopic reagin was obtained from E. R., a white woman, aged 24, who is highly sensitive to chicken egg protein. This is shown by the onset of an asthmatic attack, vomiting and an eruption about the face and mouth on ingestion of eggs, and further demonstrated by scratch tests, the Prausnitz-Küstner reaction and the Walzer reaction. Her serum always shows a high titer against egg antigen. Serologic tests for syphilis were negative.

The one case reported is of C. T., a white boy, aged 11 years, who had chickenpox in October 1934. Several vesicles became secondarily infected, and a large ulcer resulted over the middle of the anterior surface of the left tibia, measuring 3 by 4 cm., irregular in contour and about 3 mm. in depth, with undermined border and purulent exudate over the base. This ulceration was treated for two months in the outpatient surgery clinic of the Colorado General Hospital, with no improvement. Blastomycosis, tuberculosis and syphilis were excluded by laboratory tests. Personal and family histories were negative for allergy. The boy was referred to the outpatient dermatology clinic, Jan. 11, 1935, and a diagnosis of indolent pyogenic ulcer was made.

January 18, 0.1 cc. of serum obtained from the girl sensitive to egg was introduced intradermally at each of four equidistant sites just outside the area of inflammation and about one-half inch from the edge of the ulcer. The patient had been told not to eat egg in any form for two days preceding and following the injection. Forty-eight hours after injection of the skin he was given three soft boiled eggs. Forty-five minutes after eating the eggs he complained of itching and burning in and around the ulcer. Within two hours the area around the ulcer was red and edematous, and the erythema and swelling later almost circumscribed the leg. In twenty-four hours the reaction had completely subsided, and the ulcer was considerably

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1. Prausnitz, C., and Küstner, H.: Zentralbl. f. Bakt. **86**: 160, 1921.
2. Walzer, Matthew: J. Immunol. **11**: 249 (April) 1926.
3. Kline, B. S.; Cohen, M. B., and Rudolph, J. A.: J. Allergy **3**: 531 (Sept.) 1932.

reduced both in area and in depth. With no general or local treatment except the use of compresses of physiologic solution of sodium chloride to keep the ulcer clean, it progressed to rapid healing. Seven days after the intradermal injections, the surface of the ulcer was level with that of the surrounding skin, epithelial islands were scattered over the surface and complete healing occurred in seventeen days. The patient was ambulant throughout the treatment.

The results that we obtained in this case have suggested the use of this procedure in other indolent conditions, and further study is being made. We make this preliminary report in the hope that a wider use of this procedure will prove or disprove its possible value.

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Special Article

GLANDULAR PHYSIOLOGY AND THERAPY

THE PATHOGENESIS AND PREVENTION OF SIMPLE OR ENDEMIC GOITER

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NOTE.—*This article and the articles in the previous issues of* THE JOURNAL *are part of a series published under the auspices of the Council on Pharmacy and Chemistry. Other articles will appear in succeeding issues. When completed, the series will be published in book form.*—ED.

Important contributions have been made during the last thirty years to the etiology and prevention of simple or endemic goiter. Progress in its prevention, wherever attempted, both in man and in animals, has been especially striking, and as the results are cumulative, greater benefits—indeed, complete prevention—can be predicted.

Extension of knowledge of the etiology has come about mainly through studies of thyroid chemistry, the correlation of anatomic changes with variations in the iodine content, interrelations of the thyroid with other organs of internal secretion, particularly the pituitary and sex glands, and the pharmacology, first of whole thyroid substance and later of thyroxine.

While goiter (thyroid hypertrophy and hyperplasia) is only the anatomic expression of the specific physiologic disturbance or deficiency, the anatomic changes are, however, a constant delicate and objective indicator of the course, degree and intensity of the disturbance. On this account a brief summary of the anatomic cycle offers a good background for the discussion of etiology.[1]

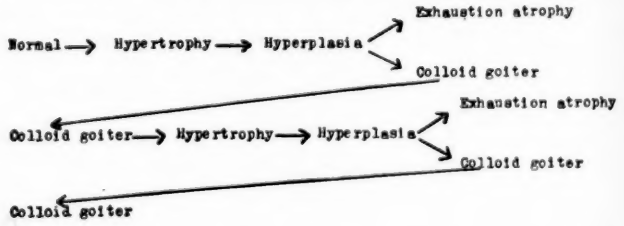
This cycle may be represented schematically as in the accompanying chart.

So far as has been determined, this is the only morphologic cycle that the thyroid cell is capable of exhibiting. Thus the series of changes observed in simple or endemic goiter, in exophthalmic goiter, in compensatory hypertrophy following partial thyroidectomy, and following the administration of the thyrotropic hormone are all essentially identical. Many investigators[2] have asserted that there are several different forms, even of endemic goiter, but I cannot find adequate support for such a view. Virchow's view,[3] that the various morphologic forms of goiter are only terminal metamorphoses of a single initial type, more nearly embraces the facts.

The structural unit of the thyroid is the follicle. Normally it is a rounded, grapelike, closed vesicle distended with clear viscid colloid (thyroglobulin). The epithelial lining is composed of flat cuboidal cells (never higher than cuboidal) arranged in a single layer; the bases of these cells are attached to a delicate vascular connective tissue framework. The cells are of two types, as first determined by Langendorf:[4] (1) chief cells and (2) colloid cells, and the necessary intermediate stages. These two types of cell occur in varying proportions, but the chief cells in the normal gland always predominate. The proportion of chief cells to colloid cells can be varied and controlled experimentally, and because of this the two types are considered as indicating only different stages of secretory activity of a single cell type. The chief cell is the actively secreting cell and the colloid cell is the collapsed spent cell.

HYPERTROPHY AND HYPERPLASIA

Whenever the amount of thyroid tissue becomes insufficient to supply sufficient thyroid secretion, whether from reduced iodine intake, or from increased demands or following partial thyroidectomy, compensatory hypertrophy occurs. This hypertrophy, whatever the contributing cause, appears always to be the result of direct stimulation by the thyrotropic hormone. This is characterized principally by a decrease in the stainable colloid and in the iodine content, by an increase in the blood supply and by a change in the follicular epithelium from low cuboidal and cuboidal to high cuboidal or even columnar. There are infoldings and plications of the lining epithelium, mitoses and new follicle formation if the stimulation is of sufficient intensity and duration. This entire series of hypertrophic cell changes may now be produced in the guinea-pig in from three to four days by injecting the thyrotropic hormone of the anterior pituitary;[5] in the dog it occurs in about two



weeks following removal of three fourths of the gland, and in the rabbit within a month when kept on a diet of cabbage[6] or of alfalfa hay and oats[7] of low iodine content.

INVOLUTION (COLLOID GOITER)[8]

When physiologic compensation occurs, whether as a result of increased iodine intake, increased secretory epithelium or decreased demands in the organism (decreased thyrotropic stimulation), the gland slowly or rapidly returns to its quiescent, colloid or physio-

From the Laboratory Division, Montefiore Hospital for Chronic Diseases.

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2. McCarrison, R.: Reports of the International Conference on Goiter, Bern, 1927. Aschoff Ludwig: Reports of the International Conference on Goiter, Bern, 1927.
3. Virchow, Rudolf: Die Krankhafte der Geschwülste **3**: 4, 1863.
4. Langendorf, O.: Arch. f. Anat. u. Physiol. (suppl.), 1899, p. 219.
5. Loeb, Leo, and Bassett, R. B.: Proc. Soc. Exper. Biol. & Med. **26**: 860 (June) 1929.
6. Chesney, A. M.; Clawson, T. A., and Webster, B.: Bull. Johns Hopkins Hosp. **43**: 261 (Nov.) 1928. Marine, David; Baumann, E. J., and Cipra, Anna: Proc. Soc. Exper. Biol. & Med. **26**: 822 (June) 1929.
7. Marine, David, and Baumann, E. J.: Tr. A. Am. Physicians **47**: 261, 1932.
8. Marine, David, and Lenhart, C. H.: Bull. Johns Hopkins Hosp. **20**: 131, 1909.

logically normal stage. The anatomic changes in such a gland are the reverse of those which occur during hypertrophy and hyperplasia. The gland as a whole becomes firmer; the color changes from an opaque grayish red to a translucent amber red when involution is complete. The blood supply diminishes. Colloid (thyroglobulin) accumulates, fills and even distends the follicles. There is a rise in the iodine store, somewhat paralleling the increase in stainable colloid. The columnar epithelium slowly or rapidly shrinks to cuboidal and finally flat cuboidal if the involution is complete. Just as the active hypertrophies may be arrested at any stage of their progress, so also involution may be arrested at any stage. The stroma becomes less prominent, from compression, decreased vascularity or absorption. The completely involuted thyroid (colloid goiter) is the closest condition to normal physiologically, chemically and anatomically that a thyroid which has once been actively hyperplastic can again assume.

The old view (Virchow, Berry) that colloid goiter is a degenerative process is disproved by the fact that such a gland is capable of undergoing hyperplasia (regeneration) and involution many times during its life history. This has been demonstrated both in man and in animals. Involution is usually accompanied by a decrease in the size of the gland. This is not essential, however, and frequently in man not only does the size not diminish but actual painful temporary enlargement may occur (so-called iodine thyroiditis), especially when iodine is given suddenly in large doses to individuals with actively hyperplastic (parenchymatous) goiters. The development of a colloid goiter from a normal gland by pressure distention of the follicles with colloid, I consider impossible.

All the evidence at present available indicates that the thyroid enlargement is always initiated as an active hypertrophy and hyperplasia. Distention of the follicles with colloid undoubtedly causes further enlargement in certain long standing goiters, of the type designated as struma diffusa colloides proliferans, which are incompletely involuted and yet oscillate between slight further hypertrophy and slight further involution.

ATROPHY

While involution or recovery is the usual termination of compensatory hypertrophy, it occasionally happens (notably in endemic cretinism) that the maximum degree of hyperplasia possible fails to bring about functional compensation and sooner or later exhaustion, atrophy and death of the epithelial cells ensue. This outcome is most frequently seen in goitrous endemic cretins, both in man and in animals, and occasionally in the late stages of exophthalmic goiter. The morphologic changes observed are best interpreted as the result of long continued hyperactivity of the cells without sufficient physiologic rest, a lack of the thyrotropic hormone or a combination of the two. In such glands the most striking changes are seen in the epithelium and stroma. In the first stages the picture is that of an extreme degree of active hyperplasia with only an occasional pyknotic or atypical cell mass. In the more advanced stages the cells lose their uniform arrangement in the follicle wall. Desquamation and disintegration of the cells may be seen in the same follicle with mitotic figures and normally hypertrophic cells. Nuclei of the affected cells show great irregularity; sometimes they are enlarged and hyperchromatic, sometimes small and pyknotic, but always variable in size and staining intensity. The colloid is usually greatly reduced, although occasionally dense masses of colloid may appear to be embedded in the stroma with little remaining evidence of the original follicular epithelium. As the atrophic process continues, the follicle becomes reduced in size by cell death and advancing sclerosis, until the remaining epithelial cells appear as compressed nests of distorted cell masses. The stroma is always relatively increased and in some instances seems to be absolutely increased.

It has long been known that, in spontaneous Gull's disease, atrophy of the thyroid may occasionally occur as a progressive shrinkage in the size of the follicles without previous enlargement. The exact nature of such atrophies are still difficult to understand despite the fact that Allen [9] and Smith [10] have shown that removal of the anterior hypophysis causes a rapid shrinkage in all the elements of the thyroid and that such atrophic glands can be restored to normal or even be made hyperplastic by the parenteral administration of whole anterior pituitary or of hypophyseal extracts. On the basis of this work one could look on the thyroid atrophy in certain cases of Gull's disease as primarily due to a loss of the thyroid stimulating principle of the anterior pituitary, although there is important evidence against this view, whereas the thyroid atrophy of endemic cretinism is always preceded by parenchymatous goiter and is due to a primary thyroid exhaustion.

STRUMA NODOSA (ADENOMATOUS GOITER)

This secondary morphologic feature of goiter is restricted almost entirely to man and on this account it has been impossible to test experimentally any hypothesis regarding its mode of origin or nature. Wegelin [11] has shown that adenomas are rarely seen in the developmental stages of goiter and that the percentage of adenomas increases with the duration of the goiter. While the fetal rest hypothesis [12] may explain some instances (congenital adenomas), it is certain that the great majority arise from previously differentiated thyroid tissue and in their beginning are due to the same physiologic stimulus that causes the diffuse goiter in which they arise. Prevention of thyroid hyperplasia completely prevents the development of these adenomas. They usually begin in the deeper portions of long standing, partially involuted goiters that have been oscillating between involution and hyperplasia for years.[13] Such secondary hyperplasias appear at first as islands of regeneration surrounded by quiescent colloid goiter. If the thyroid stimulation is sufficiently intense the entire gland will become hyperplastic, and in such glands the nodules or adenomas are temporarily masked.

A satisfactory explanation for these different rates of growth is not available, but it would seem that variations in the blood supply and lymphatic drainage are important factors, particularly because the normally cystic structure of the thyroid predisposes this tissue to greater pressure effects from stroma bands, colloid retention, cyst formation and the like. Thyroid adenomas are more analogous to uterine fibroids than other forms of new growths. Since they develop as a result of the same stimulus that causes the thyroid as a whole to undergo hypertrophy, so also they tend to exhibit the same cycle of cell changes (hypertrophy and involution), but much more irregularly and to a

9. Allen, B. M.: Biol. Bull. **32**: 117, 1917.
10. Smith, P. E.: Proc. Soc. Exper. Biol. & Med. **16**: 81, 1919.
11. Wegelin, C.: Handb. d. spez. path. Anat. u. Histol. **8**: 175, 1926.
12. Woefler, Anton: Arch. f. klin. Chir. **29**: 1, 1883.
13. Graham, A.: Am. J. Surg. **7**: 163 (Aug.) 1929.

lesser degree. They are also capable of selectively taking up iodine and of producing, secreting and storing thyroxine, though with less constancy and regularity than thyroid tissue under full physiologic control. In the late stages they become more autonomous, lose more of their physiologic attributes and become true tumors; this is indicated by the fact that 95 per cent of the malignant epithelial tumors of the thyroid arise from them.

In this brief summary of the principal and sequential stages of the morphologic cycle concerned in the developmental (parenchymatous) and recovery (colloid) phases of goiter, discussion of the multitude of secondary changes (except adenomas) has been purposely omitted. It is believed that this cycle is the only morphologic response to variations in functional activity of which the thyroid is capable and therefore that it is not specific for any given disease, although it is a constant and readily measured expression of the variations in the supply of or in the demands of the body for thyroid secretion.

What is known of the function of the thyroid may be summed up as follows: It provides the means through its specific iodine containing secretion for maintaining a higher rate of metabolism than would otherwise obtain, and also, through variations in its activity, it provides a means for varying the rate of metabolism to meet changing physiologic needs. That a very efficient mechanism exists for stimulating the thyroid by way of the blood stream has long been suspected. The existence of such a mechanism was assumed in order to explain compensatory hypertrophy of the remaining fragment following partial thyroidectomy or the enlargement of transplants located in any part of the body and their dependence for growth on the amount of the animal's own thyroid tissue removed. Marked hypertrophy of the anterior pituitary in individuals with endemic goiter has been known for nearly 100 years.[14] Experimental hypertrophy of the pituitary following thyroidectomy was first demonstrated by Rogowitsch;[15] but the first proof of a pituitary hormone regulating thyroid activity followed the demonstration by Allen and by Smith that hypophysectomy caused atrophy of the thyroid and Smith's later demonstration[16] that implants of fresh pituitary restored such atrophic thyroids to normal or even increased activity.

Subsequent work by many investigators from many angles has led to the conclusion that probably the thyroid can be stimulated only by this pituitary hormone (thyrotropic). As already pointed out, the morphologic and chemical changes in the thyroid following injections of the thyrotropic hormone are identical with those seen in compensatory hypertrophy following partial removal or in the developmental stages of spontaneous goiter in man and animals.

While the thyrotropic hormone of the anterior pituitary appears to be the sole means of stimulating the thyroid, there is ample evidence also that the thyroid secretion exercises a great influence on the anterior pituitary, particularly as regards control of the production and excretion of its thyrotropic hormone.[17] Thus, desiccated thyroid will prevent the loss of acidophilic granules and the pituitary hypertrophy that normally follows thyroidectomy, and iodine alone will restore the acidophilic granules and greatly reduce the volume of the pituitary in animals with hyperplastic thyroids.

The thyroid and anterior pituitary glands are delicately balanced. Any deficiency in the thyroid secretion quickly stimulates the pituitary, either directly or by way of a nervous mechanism, to produce more thyrotropic hormone; and, conversely, supplying the thyroid secretion reduces anterior pituitary activity.

Any modern conception of the etiology of goiter must therefore involve consideration of the availability of thyroxine, the activity of the thyrotropic hormone and the interplay of these two substances as basic factors. Such a theory must also include all the conditions that influence the quantity and action of these two substances.

The principal clinical diseases associated with disturbance of function of the thyroid may be grouped as follows:

I. Thyroid insufficiencies:
   1. Simple goiter (endemic, epidemic, sporadic).
   2. Myxedema:
      (*a*) Infantile (cretinism).
      (*b*) Adult (Gull's disease).

II. Exophthalmic goiter.

The discussion of exophthalmic goiter is not part of this paper, but certain features of this disease may be referred to for comparison. Exophthalmic goiter is not a primary thyroid disease. The thyroid reactions in exophthalmic and endemic goiter are, however, similar anatomically and are apparently the result of increased pituitary (thyrotropic) activity. The anterior pituitary is usually enlarged in simple goiter, while in exophthalmic goiter it is not. In simple goiter the pituitary stimulation is dependent on deficient thyroid secretion, while in exophthalmic goiter the pituitary stimulation, if present, is probably the result of a deficiency of some factor or factors related to the sex glands and adrenal cortex. Attempts to treat exophthalmic goiter with estrogenic substance, while not entirely negative, suggest that the essential deficiency is not the estrogenic hormone. Also experiments with cevitamic acid,[17a] a constituent of both the adrenal and the sex glands, have not established that this substance has any definite connection with the disease. In exophthalmic goiter the iodine supply is ample, while in endemic goiter this is deficient. The adequate iodine intake makes possible the hyperthyroidism, and this in turn may further depress gonadal functions. Endemic goiter occurs more frequently before sexual maturity, while exophthalmic goiter is more common after the age of sexual maturity, and the cases may be divided roughly into two groups: (1) those occurring in young adults and (2) those occurring during the decline of sexual life. Many students of exophthalmic goiter have been convinced that the primary deficiency in this disease lay in the gonadal sphere (sex glands and adrenal cortex), and the discovery of the possible pituitary link offers a rational hypothesis of how the gonadal insufficiency may stir up the thyroid.

Endemic goiter and cretinism are believed to be different degrees or stages of the same nutritional fault, and all the evidence indicates that they are primarily due to thyroid failure. Paracelsus[18] was the first to emphasize this close relationship, which all subsequent work has confirmed. This relationship was perhaps

14. Nièpce, B.: Traité du goitre et du crétinisme, Paris, 1851.
15. Rogowitsch, N.: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's) **4**: 453, 1889.
16. Smith, P. E., and Smith, I. P.: J. M. Research **43**: 267 (June-July) 1922.
17. Marine, David; Rosen, S. H., and Spark, C.: Proc. Soc. Exper. Biol. & Med. **32**: 803 (Feb.) 1935.

17a. Cevitamic acid is the name adopted by the Council on Pharmacy and Chemistry for crystalline vitamin C, formerly designated ascorbic acid.—ED.

18. Paracelsus, A. P. T.: De generatione stultorum, Opp. Strasbourg **2**: 74, 1616.

most briefly expressed by Morel [19] as follows: "Goiter is the first stage on the road to cretinism." Spontaneous myxedema (Gull's disease) in the light of recent work may be primarily a failure of certain functions of the anterior pituitary, particularly a deficiency of the thyrotropic and gonadotropic hormones, so that while the end result in myxedema on the one hand and that in cachexia thyropriva and endemic cretinism on the other are similar in that they have thyroid insufficiency in common, the thyroid insufficiency in the two diseases may be attained by different means. There are important general differences between spontaneous myxedema and cachexia thyropriva. For example, in Gull's disease exophthalmos does not develop and there is gonadal atrophy accompanying or even preceding manifestations of myxedema, while after thyroidectomy exophthalmos may occur and not only does gonadal atrophy not occur but increased sexual activity usually results, particularly in rabbits. The sex gland atrophy of myxedema would now be considered as another indication of anterior pituitary failure, while the exophthalmos and increased gonadal activity of thyroidectomized sexually mature animals would be explained as due to pituitary stimulation.

SIMPLE ENDEMIC GOITER AND CRETINISM

Occurrence and Distribution.—Simple goiter (endemic, epidemic, sporadic) may occur in any land or fresh water animal with the ductless thyroid, although there are species and individual differences in its incidence in animals living in the same general environment. Animals living in the sea are free from the disease. On the seacoast generally, simple goiter is rare. In man it occurs in all races, in all climates and at all habitable altitudes. In the temperate zones there is a seasonal variation corresponding to the seasonal variation in the iodine store of the thyroid (Seidell and Fenger).

While goiter may occur anywhere, even in midocean, as on one of Captain Cook's voyages in 1772 (associated with scurvy), one of the most striking features is the increased incidence in certain more or less defined regions of the world—the so-called districts of endemic goiter. The most notable of these districts are the Himalayan Mountain region of South Central Asia; the Alps, Pyrenees and Carpathian Mountain regions of Europe; the Andean Plateau and southeastern Brazil in South America, and the St. Lawrence and the Great Lakes basin extending through Minnesota, the Dakotas and adjacent Canadian provinces and the Pacific Northwest including Oregon, Washington and British Columbia in North America.[20] It will be noted that most of these regions are mountainous, although there are important exceptions. Of greater importance is the occurrence of endemic goiter for the most part on the leached soils deposited from the last glacial period. There is also general evidence of decreases in the incidence of goiter in many of the minor endemic goiter districts during the past 100 years in addition to the rapid decrease since iodine prophylaxis was introduced.

There are many reports of the sudden occurrence of goiter in large numbers of men and animals—so-called epidemics. In man these epidemics have for the most part occurred in new arrivals in military garrisons, in institutions, in schools or in new settlements in districts where goiter was endemic. These individuals usually recover from goiter on returning to nongoitrous districts. Outbreaks are reported from time to time in the lower animals; for example in fish hatcheries, on poultry farms and in dairy herds. Some of these acute outbreaks have been in goiter regions while others have not, indicating that with optimal conditions for its development goiter may occur anywhere.

Age.—Goiter develops more frequently before sexual maturity than in the older age groups. The major periods in life when goiter in man most frequently develops are (1) during fetal life (congenital goiter), (2) during puberty, (3) during pregnancy and lactation and (4) during the decline of sexual life.

Heredity is not an important factor in simple goiter. The thyroid has such a wide range of physiologic compensations that its functional derangements may be compensated for in one generation.

Beginning with puberty, goiter in man is much more frequent in females, but in districts of severe endemic goiter this sex difference may be masked. In lower animals and in man before puberty a difference in the incidence of spontaneous goiter due to sex has not been definitely established. In experimental goiter (alfalfa hay-cyanide) in rabbits, males are more frequently affected.

The cause or causes of goiter have interested physicians from the remotest times, and in general the views concerning etiology have reflected the state of medicine existing at the time. A great variety of physical and chemical agents and hypothetical goiter noxae have been brought forward as causal factors. St. Lager [21] grouped them under forty categories. Most of them are now of historical interest only, but some are of present-day importance. Poverty, unhygienic living conditions, unbalanced diets, and lack of transportation are important indirect and contributing causes. McCarrison [22] states that in northern India it is an old saying that families who could afford the luxury of table salt were free from goiter. This statement implied poverty versus riches, but today it would imply a source of iodine. The idea of a goiter noxa has come down through several centuries. This noxa has been interpreted in different periods as miasma or emanations from decomposing animal and vegetable matter, as a colloidal organic agent in water, or as various inorganic substances dissolved or suspended in water, particularly salts of calcium and magnesium,[23] fluorides, silicates and sulphides. With the rise of bacteriology and protozoology, the view that the noxa might be a living organism or its toxin was extensively investigated. McCarrison [24] believed that organisms of the colon group were causal factors. Chagas [25] reported a type of endemic goiter in Brazil which he thought was due to a trypanosome (Schizotrypanum Cruzi). Subsequent work has shown that this infection may exist without thyroid enlargement and that the thyroid enlargement may exist without the infection. That many toxins or poisons of bacterial or other origin may indirectly stimulate the thyroid to increased activity and visible enlargement is well known. Thyroid enlargements are of frequent occurrence in early pulmonary tuberculosis, in secondary syphilis, in the acute fevers

19. Morel: Du goitre et du crétinisme: Etiologie, prophylaxie, traitement, Paris, 1864.

20. Careful goiter surveys of the school population in selected districts of the United States have been made by Olesen (Pub. Health Rep. **44**: 1463 [June] 1929) of the United States Public Health Service. A resurvey in the same districts with similar methods would be of great value.

21. St. Lager, E. R.: Etudes sur les causes du crétinisme et du goitre endémique, Paris, Ballière et fils, 1867.

22. McCarrison, Robert: Etiology of Endemic Goiter, London, John Bale Sons & Danielsson, Ltd., 1913.

23. Grange: Arch. gén. de méd., January, 1850, p. 108.

24. McCarrison, Robert: Indian M. Gaz. **46**: 253, 1911.

25. Chagas, Carlos: Mem. Inst. Oswaldo Cruz. **3**: 219, 1911.

and in many intoxications. The thyroid reaction in these conditions is now looked on as a part of the general defensive mechanism against infection; the thesis of infection as a causative agent would not explain the age, seasonal, geographic and sex distribution of simple goiter. No evidence exists that goiter may be transmitted by contact, nor is it possible to transmit the disease from animal to animal either through feeding or through injecting the tissues of goitrous animals. Toxins and infections could be contributing causes of goiter only in somewhat the same way that they may contribute to the onset of diabetes mellitus; i. e., by increasing the needs of the body for thyroxine or for insulin.

Water has been associated as the carrier of the goiter noxa by all peoples from the remotest times.[26] All the experiments so far conducted with water have yielded negative or doubtful results. These results could be as easily interpreted as indicating a deficiency of some essential element, iodine, as indicating the presence of some specific substance. It is not in accord with the facts to state that water in goitrous regions is always polluted. There is the interesting experiment of Portland, Ore., where the incidence of goiter rose sharply after the introduction of the water from Mount Hood, which, from the standpoint of organic contamination, is one of the purest of waters.

One substance in water, calcium, stands out as an important factor in goiter and has been considered an etiologic factor for more than a century.[27] The high calcium content of water in many goiter regions is significant, but there are many areas where the calcium content is high without goiter and other areas where the calcium content is low with goiter. This would indicate that calcium is not an essential factor, though it probably is an important contributing factor.

A low iodine content of water, food and soils in regions where goiter was common was first established by Chatin.[28] His work was unfortunately discredited and further advance was blocked for forty-five years, until Baumann [29] and his pupils discovered the normal occurrence of iodine in the thyroid. Hirsch's [30] criticism of Chatin's work may be quoted as representative of the prevailing opinion up to the time of Baumann's discovery:

> A short lived opinion was that advocated by Chatin (before him by Prevost and Maffoni and after him by Marchand and Fourcault) to the effect that the cause of goiter and cretinism lay in the absence of iodine in the drinking water and in the air. Chatin pointed to his numerous inquiries which showed that wherever the amount of iodine was relatively large, as in the basin of the Seine, Yonne and other rivers, the two diseases were unknown; that they both became prominent with a smaller amount of iodine, as in the Rhone valley, and that this inverse ratio obtained with even greater force in the valley of the Isere. If Chatin's theory is true it would then remain a question, and a very doubtful one, whether iodine has a prophylactic power against goiter as well as a curative.

Virchow [31] also voiced his opposition to the idea that the absence of a substance could be a causal factor in goiter and insisted that the active agent must be a positive factor.

Deficient chlorides (also indicating a low iodine content) in waters of goiter regions was pointed out by Eulenberg.[32] Today Chatin's observations have been generally confirmed by all workers, including McClendon [33] and Remington [34] in this country, von Fellenberg [35] in Switzerland, and Hercus [36] in New Zealand.

The two positive contributions that have come out of all the early work on the etiology of goiter are (1) the high calcium and (2) the low iodine content of water in districts of endemic goiter.

Most of the recent experimental work has tended to add further support to both the low iodine and the high calcium intake as factors in the etiology of goiter.

The part that calcium plays in goiter development is not understood, although the recent experimental work of Tanabe,[37] Hellwig,[38] Thompson [39] and others abundantly confirmed the older geological and chemical studies and established the fact that an excessive intake of calcium in some manner increased the goiter-producing effect of a given diet. There is some evidence that it acts partly by neutralizing the effect of thyroid secretion; that is, by creating a relative insufficiency of iodine. Thus, Zondek and Reiter [40] showed that the metamorphosis of tadpoles by thyroxine was notably delayed by adding a soluble calcium salt ($CaCl_2$) to the water. The work of Abelin [41] and others showed that calcium greatly lessened the metabolic effects of thyroxine; that is, animals (rats) given an excess of calcium in a given diet showed much less effect from thyroxine administration than did the controls. The work of Tanabe showed that when excessive amounts of calcium chloride were given to rats in the drinking water, together with a low iodine intake, enlargement of the thyroid occurred. Hellwig has confirmed this observation. More recently Thompson has further extended this work with calcium and has demonstrated that calcium carbonate is increasingly effective the lower the iodine intake; she has further shown that always with a constant iodine intake the thyroid reaction is greatly increased by increasing the calcium intake. What effect the phosphorus and magnesium levels have on this action of calcium in blocking the action of thyroxine is not known. The parathyroids are constantly enlarged in the experimental (low iodine-high calcium) goiter of rats and also in the cabbage and alfalfa hay-cyanide goiter of rabbits.

A great many food factors are known to affect the thyroid. St. Lager stated that it was a common belief that a high fat diet was a factor. McCarrison, Mellanby and others have confirmed this view. Baumann and his pupils noted that feeding foods rich in iodine (codfish) caused a storage of iodine in the thyroid and that fresh meats caused a decrease in the iodine store. Watson also found that a meat diet caused hypertrophy of the thyroid. Marine and Lenhart showed that pig's liver was the most potent of a variety of meat products in causing thyroid hyperplasia in brook trout and dogs. Chesney and Webster reported that a diet consisting solely of cabbage often produced goiter in rabbits. This finding has been confirmed, but there are important

26. Pliny: Historia naturalis lib. IX, cap. 37, sect. 68.
27. McClelland: Dublin J. M. Sc. **11:** 295, 1837.
28. Chatin, A.: Gaz. d. hôp. **25:** 14, 38, 50, 86 and 94, 1852.
29. Baumann, E.: Ztschr. f. physiol. Chem. **21:** 319, 1896.
30. Hirsch, A.: Geographic and Historical Pathology, ed. 2, Tr. New Sydenham Soc. **2:** 196, 1885.
31. Virchow, Rudolf: Die Krankhafte der Geschwülste **3,** 1863.
32. Eulenberg: Gaz. de méd., Paris, 1859, p. 347.
33. McClendon, J. F.: Physiol. Rev. **7:** 189 (April) 1927.
34. Remington, R. E.: J. South Carolina M. A. **25:** 445 (June) 1929.
35. von Fellenberg, T.: Biochem. Ztschr. **139:** 371, 1923.
36. Hercus, C. E.; Benson, W. N., and Carter, C. L.: J. Hyg. **24:** 321 (Dec.) 1925.
37. Tanabe, H.: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's) **73:** 415, 1925.
38. Hellwig, C. A.: Iodine Deficiency and Goiter, Arch. Path. **11:** 709 (May) 1931.
39. Thompson, J.: Influence of the Intake of Calcium on the Thyroid Gland of the Albino Rat, Arch. Path. **16:** 211 (Aug.) 1933; Endocrinology **17:** 537 (Sept.-Oct.) 1933.
40. Zondek, H., and Reiter, T.: Klin. Wchnschr. **2:** 1344 (July 16) 1923.
41. Abelin, I.: Biochem. Ztschr. **199:** 72, 1928.

annual and seasonal variations in the goiter-producing capacity of cabbage. My collaborators and I have many times referred to the frequency with which thyroid hyperplasia develops in prepuberal rabbits maintained on a diet of alfalfa hay and oats. There are great differences in the goitrogenic action of different samples of alfalfa hay, which are related, but not entirely, to the variations in iodine content. We have frequently pointed out that methyl cyanide ("acetonitrile") materially augments the goitrogenic action of both cabbage and alfalfa hay diets and that traces of iodine entirely prevent the thyroid overgrowth with these diets. It should be pointed out that both cabbage and alfalfa have high calcium and relatively low phosphorus contents and that they do not produce goiter unless the iodine content is low.

In recent years, vitamin deficiencies[42] have been brought forward as causal factors in goiter. There is no evidence that a vitamin deficiency plays any primary rôle, although there is some evidence that deficiencies of vitamin B complex and vitamin C are contributing factors. Radioactive substances in water have also been considered causal factors, but no positive connection has been established.

Halsted[43] first produced experimental congenital goiter in puppies by removing most of the mother's thyroid early in pregnancy. Marine and Lenhart[44] confirmed this and showed also that congenital goiter could be easily prevented in such experiments by giving the mother a few milligrams of iodine during pregnancy. The extensive studies of the relations of iodine to histologic structure in representative series of mammals including man have shown that this element was always lowered to a critical level before hypertrophic changes in the thyroid began.[45] It was further shown that hypertrophic and hyperplastic changes could be readily controlled by giving or withholding traces of iodine; in puppies 1 mg. of potassium iodide administered by mouth at weekly intervals was more than sufficient to prevent thyroid enlargement, while control puppies of the same litter, living in the same kennel and partaking of the same food, developed large goiters.[46] Similar evidence of iodine controlling the growth of thyroid transplants located in any part of the body has been reported by Manley and Marine.[47]

To sum up the evidence at present available concerning the etiology of goiter, I believe that the view that goiter is caused by a specific virus or toxin or by the presence of a specific substance may be permanently abandoned and that one is justified in concluding that simple or endemic goiter is a work or compensatory hypertrophy instituted immediately by the thyrotropic hormone of the anterior pituitary in response to the demands, normal or abnormal, of the body for thyroid secretion. The essential cause of simple goiter centers about the supply of thyroxine and the needs, normal or abnormal, of the thyroid for iodine. Since there is no evidence that the ability of the thyroid to build up di-iodotyrosine and thyroxine is lacking in such thyroids, one must conclude that goiter is a deficiency disease due to an insufficient supply of iodine. This iodine deficiency may be relative or absolute and may result from (1) factors that increase the needs of the body for thyroxine, such as puberty, pregnancy, the menopause, certain infections and intoxications, exposure to cold, excess of certain substances in the dietary, including fats, proteins and calcium (the ratios of the latter with phosphorus and magnesium are also important), and deficient oxidation (for instance, thyroid reaction in anemias or in the presence of oxygen deficiency such as occurs at high altitudes); (2) factors that interfere with the absorption or utilization of a normal intake of iodine, and (3) factors that bring about an abnormally low intake of iodine.

All the factors enumerated in group 1 are examples of relative iodine deficiencies. In specific examples, such as pregnancy, the relative insufficiency is assumed to be associated with increased physiologic demands. An excessive calcium intake might neutralize thyroxine or protect the cells against thyroxine, or the calcium effect might be due to altered ratios with phosphorus and magnesium. Deficient oxidation might result from a lowered oxygen transport, anemia or lowered oxygen pressure in the atmosphere.

Concerning the second group there is no knowledge. It has been suggested that the flora and fauna of the alimentary tract might divert the iodine intake. It has also been suggested that the thyroid cells, through age or heredity, might lose their capacity to build up diiodotyrosine and thyroxine; but no one has obtained such evidence, and with a moderately extensive experience I have seen nothing that would support such a view.

Regarding the third group, the outstanding facts are (1) that in districts in which goiter is common the iodine content of the soil, water and foodstuffs is low, (2) that in experimental goiter a low iodine intake is essential for goiter development, and (3) that the addition of from 0.5 to 1 microgram (one millionth of a gram) of iodine daily will prevent the occurrence of goiter in rats.[48] Iodine effective in such amounts would appear to be acting in the realm of a true physiologic need rather than as a neutralizer of toxins or as an antiseptic.

While it does not seem likely now that a single positive agent—physical, chemical or biologic—will account for all thyroid hyperplasias and even though the iodine deficiency (relative or absolute) theory does account for all the known facts, nevertheless one must still consider the possibility that some positive agent may be found and must bear in mind that much of the advance so far made has been due to the zeal with which individual investigators have followed up different hypotheses.

PREVENTION

There is sufficient evidence to show that during the last century, in both the severely and the mildly endemic regions, the incidence of goiter has slowly decreased. This result is probably an indirect effect of the general economic betterment—higher standards of living, improved sanitation, larger varieties of food, control of infectious and contagious diseases, and, in particular, better and more rapid means of transportation. Prevost[49] especially emphasized the need for better transportation facilities as a fundamental factor in planning control.

42. Sure, Barnett, and Smith, M. E.: J. Nutrition **7**: 547 (May) 1934.
43. Halsted, W. S.: Johns Hopkins Hosp. Rep. **1**: 373, 1896.
44. Marine, David, and Lenhart, C. H.: Effects of the Administration or the Withholding of Iodin-Containing Compounds in Normal, Colloid or Actively Hyperplastic (Parenchymatous) Thyroids of Dogs, Arch. Int. Med. **4**: 253 (Sept.) 1909.
45. Marine, David, and Lenhart, C. H.: Relation of Iodine to the Structure of Human Thyroids, Arch. Int. Med. **4**: 440 (Nov.) 1909.
46. Marine, David, and Kimball, O. P.: J. Lab. & Clin. Med. **3**: 40 (Oct.) 1917.
47. Manley, O. T., and Marine, David: The Transplantation of Ductless Glands, J. A. M. A. **67**: 260 (July 22) 1916.
48. Levine, A.; Remington, R. E., and von Kolnitz, H.: J. Nutrition **6**: 325 (July) 1933.
49. Prevost, J. L.: Traité du goitre et du cretinisme, Paris, 1864.

Historically, the methods suggested for controlling goiter have reflected the views as to its cause prevailing at the time. Thus, when heredity was considered a causal factor, marriage with individuals from nongoitrous regions was recommended. Changing and purifying water supplies as a means of prevention have been practiced for more than a century, primarily on the theory that water was a carrier of the noxa, whether it was some inorganic or organic chemical substance or a living virus. The search for methods of prevention was one of the main purposes of the goiter commissions appointed by the Sardinian government in 1845, by the Austrian government in 1860, by the French government in 1863, by the Swiss government in 1908 and more recently by the Italian government.

The theory of Chatin [23] that goiter was due to a deficient intake of iodine would probably have quickly led to the prevention of goiter by supplying additional iodine if supporting facts of the physiology, pathology, pharmacology and chemistry of the thyroid had then been available. The keystone for this scientific background was supplied by Baumann and his pupils in 1896 when they discovered that iodine was a normal constituent of the gland. Within fifteen years after this discovery sufficient physiologic, pathologic, pharmacologic and chemical correlations of iodine with thyroid function were available to supplement the observations of Chatin and to establish an adequate scientific basis for large scale experiments in goiter prevention with iodine.

Such experiments were carried out (1909-1910) in a colony of approximately 400,000 brook trout, varying in age from newly hatched to 4 years.[50] It was demonstrated that iodine added to the water supply at its source in amounts not exceeding 1 mg. per liter entirely prevented the development of goiter and brought about involution in those fish with hyperplastic thyroids. It was later shown that changing the diet from fresh pig's liver to whole sea fish (as the source of iodine) was equally efficacious. McClendon has recently pointed out that the low incidence of simple goiter in Japan is probably due to the widespread consumption of sea foods, particularly seaweed, among the inhabitants. Following the brook trout experiments, the administration of iodine in some form or manner has been extensively and successfully applied in the large scale prevention of goiter and cretinism in sheep, cattle, pigs and domestic birds.

All attempts to arrange large scale experiments in goiter prevention with iodine in man were unsuccessful until 1917, when through the efforts of Dr. O. P. Kimball, a former teacher in the high schools of Akron, arrangements were made to carry out such experiments in the school population of Akron.[46] The simplest and cheapest method had to be used, and it was decided to administer 2 Gm. of sodium iodide in 0.2 Gm. doses distributed over a period of two weeks, to be repeated each spring and autumn. Reexamination of the pupils at the end of the first year revealed essentially the same striking preventive and curative effects that had been observed in the lower animals, and the generalization made from the work with fish, birds, sheep and pigs that goiter is the simplest, easiest and cheapest of all known diseases to prevent was equally applicable to human endemic goiter. Experiments in the prevention of human goiter were begun in Switzerland by Klinger [51] in 1918 with such striking results that in 1922 the Swiss Goiter Commission recommended the introduction of state-wide prophylactic measures against endemic goiter.

Iodine is effective in prevention when administered in any form and by any means. This fact introduces difficulties and advantages—difficulties in selecting the most convenient form and means and advantages in that prevention may be accomplished with certainty by the use of iodine in any form. Historically and quite unknowingly, iodine-containing salt (sea salt) was the first means of administration, and since 1920, when artificially iodized salt was first introduced in this country at the suggestion of Dr. H. G. Sloane of Cleveland, it has largely replaced other means of administration for general, practical prophylaxis. During the seventeen years since large scale prophylaxis of simple goiter in man with iodine was begun in the United States, it has been extended to Canada,[52] Switzerland,[53] Germany,[54] Austria,[55] Italy [56] and New Zealand,[57] with equally favorable results.

During the first years of goiter prophylaxis there was considerable opposition, both here and in Europe, because of possible untoward effects, especially that of aggravating or even causing exophthalmic goiter. During the past five or six years this criticism has largely disappeared. The reports of Plummer [58] and of McClure [59] showed a distinct increase in the number of goiter operations in the years 1926 and 1927 in Michigan and Minnesota. This increase occurred mainly in the group of patients with long standing adenomatous goiters (so-called toxic adenomas), who had undoubtedly received too much iodine. I have had an opportunity of investigating twelve cases in which physicians thought the exacerbation was entirely due to the iodized salt, but in each instance it was established that other preparations of iodine had been used at the same time. Coindet [60] had noted in 1821 that iodine administration to individuals with adenomatous goiter often had injurious effects. Kocher [61] was perhaps the greatest opponent of iodine therapy in cases of adenomatous goiter, and Plummer,[62] in a large series of carefully studied cases, clearly established that iodine, instead of bringing about a temporary remission as in cases of exophthalmic goiter with diffuse parenchymatous goiter, more often increased the metabolic rate. Undoubtedly much of the literature on "iodine-Basedow's disease" and Kocher's opposition to the use of iodine in goiter came from administering iodine in susceptible or latent cases of exophthalmic goiter presenting adenomatous goiters. There is sufficient evidence to show that there is a real danger in giving iodine to individuals with adenomatous goiter, and unquestionably the more concentrated iodized salts (from 1:10,000 to 1:5,000) cause injurious effects (iodine-Basedow's disease) in this particular group of patients, while such doses, as is well known, have no injurious effects in normal individuals or in individuals with simple parenchymatous goiter. The elimination of this group with long standing adenomatous goiter I believe will largely prevent

50. Marine, David, and Lenhart, C. H.: J. Exper. Med. **12**: 311, 1910.
51. Klinger, R.: Schweiz. med. Wchnschr. **51**: 12 (Jan. 6) 1921.
52. Cameron, A. T.: Canad. Pub. Health J. **21**: 495 (Oct.), 541 (Nov.) 1930.
53. Silberschmidt, W.: Reports of the International Conference on Goiter, Bern, 1927.
54. Dieudonné, A.: Reports of the International Conference on Goiter, Bern, 1927.
55. Wagner-Jauregg: Reports of the International Conference on Goiter, Bern, 1927.
56. Muggia, G.: Rassegna di studi psichiat. **22**: 718 (July-Aug.) 1933.
57. Hercus, C. E., and Roberts, K. C.: J. Hyg. **26**: 49 (March) 1927.
58. Plummer, H. S.: Tr. A. Am. Physicians **46**: 171, 1931.
59. McClure, R. D.: Ann. Surg. **100**: 924 (Nov.) 1934.
60. Coindet: Ann. de chim. et phys. **16**: 252, 1821.
61. Kocher, T.: Arch. f. klin. Chir. **92**: 1166, 1910.
62. Plummer, H. S.: Tr. A. Am. Physicians **43**: 159, 1928.

the occurrence of iodine-Basedow's disease and remove the most important objection to generalized iodine prophylaxis. In the Akron experiment, lasting three years, eleven instances of mild iodism and no case of exophthalmic goiter occurred in 2,190 girls between the ages of 10 and 20 years. Klinger in 1921 did not observe a case of iodism or of exophthalmic goiter in more than 1,000 children observed over a period of sixteen months. These earlier observations have been repeatedly confirmed and offer the best explanation for the decline in the criticism against iodine prophylaxis.

The daily amounts of supplementary iodine required for prevention of goiter obviously must vary with different districts, with different age groups, with different physiologic epochs of life and with different diets and climates. The normal requirements of the body for iodine are not yet known. It has been stated that from 0.04 to 0.08 mg. probably would cover the normal daily needs of an adult.[63] The most commonly used iodized salts now contain an added quantity of from 5 (1:200,000) to 10 (1:100,000) mg. of potassium iodide or its equivalent per kilogram of salt. In Switzerland the former concentration has been in general use for the past nine years, with no untoward effects. As recently pointed out by de Quervain,[64] it has reduced the incidence of goiter in school children from as high as 100 per cent to 5 per cent and has controlled congenital goiter, but there has been no change in the incidence of goiter of pregnancy or of goiter in army recruits. These observations further illustrate that amounts of iodine sufficient to prevent goiter may be insufficient to cure goiter and also that the amounts of iodine administered were insufficient to meet the greater requirements for iodine in the physiologic epochs of puberty and pregnancy. I myself feel that the addition of 10 mg. of potassium iodide per kilogram (1:100,000), because it takes care of a wider range of iodine deficiencies with no appreciably greater risk, is the concentration to be preferred. As Cameron [52] has pointed out, it would not be desirable to use minimal normal requirements of iodine, if these were known, because of the highly variable requirements previously referred to.

There are several side-effects of goiter prevention that may be mentioned. The first is the elimination of congenital goiter and cretinism. This result becomes manifest within the time limits of a single pregnancy, but in man it will require a complete reproductive cycle to provide full proof.

The second is the reduction in the number of individuals requiring partial strumectomy. This result is beginning to become manifest after ten years of general prophylaxis. McClure in 1934 reported that the number of thyroid operations in seven southern Michigan hospitals had fallen from 1,452 in 1927 to 591 in 1933, a drop of 60 per cent in thyroid operations as compared with a drop of 17 per cent in all surgical operations during this period.

The third benefit — the decline in the incidence of benign and malignant epithelial tumors of the thyroid —will likewise require another decade in the case of benign and longer in the case of malignant tumors before adequate statistical proof becomes available. The figures given by Wegelin [65] for malignant tumors of the thyroid in Berlin, where the incidence of goiter is low, and in Bern, where it is high, illustrate the influence of goiter on thyroid carcinoma and indicate the change that must take place when the incidence of goiter in the tumor age group is reduced. In Berlin there were thirteen malignant thyroid tumors in 13,426 necropsies, while in Bern there were 159 malignant thyroid tumors in 15,250 necropsies.

63. Eggenberger, H.: München. med. Wchnschr. **71**: 972 (July 18) 1924.
64. de Quervain, F.: Centralbl. f. allg. Path. u. path. Anat. (abst.) **60**: 360, 1934.
65. Wegelin, C.: Handb. d. spez. path. Anat. u. Histol. **8**: 306, 1926.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING ARTICLE. HOWARD A. CARTER, Secretary.

ELECTROSURGERY

A DISCUSSION OF INDICATIONS, ADVANTAGES, DISADVANTAGES AND WARNINGS CONCERNING ITS USE

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In presenting this article I do not intend to dwell on the technic or attempt to add to the knowledge of men who have specialized in this method, but rather to present to the general profession certain surgical conditions in which electrosurgery has been tried and found good, and to point out both the advantages and disadvantages of this method of surgery. The Council on Physical Therapy has studied and evaluated many different kinds of electrosurgical machines and has placed their approval on a number of them. This does not mean that the Council feels that electrosurgery is the method of choice for the general man in a great many of the surgical conditions for which it has been recommended, either by manufacturers' agents or by certain authors who have more or less specialized in electrosurgery. It has become quite apparent that, if electrosurgery is to retain its proper place in the surgical world, the profession must be enlightened concerning the disadvantages as well as the advantages of this form of surgery.

Electrosurgery, or the application of certain electrical currents to the body tissues for surgical reasons, is no longer experimental but is rapidly becoming the procedure of choice in a limited number of surgical conditions. There are three end results which can be obtained by the application of certain electrical currents to body tissues: dehydration, coagulation and section, or a cutting effect. A different type of electrical current is necessary to obtain these various results. In dehydration, as the name implies, there is an actual drying out or shrinking of the tissues, while coagulation produces more destruction, a homogeneous granular débris, as when applied to sensitive tumor cells. In cutting, there is a rapid destruction of a thin line of tissue, with a separation resulting, quite similar to that obtained by incision with the scalpel.

There are a great many electrosurgical machines on the market. The majority of them will give these types of currents, although some may excel in one current and be deficient in another. In selecting a machine, the surgeon must bear in mind that constant improvements and certain refinements are being added to these machines for the purpose of making them fool proof or prolonging their usefulness, or to make the three currents uniformly adequate in the given machine.

It is not necessary for the surgeon to master the physics of the machine producing these currents, but

it is imperative that every surgeon attempting to use electrosurgery should become thoroughly familiar with the effects on the tissues of these various currents. This can be obtained at first by experimentation on dead tissues and on the tissues of experimental animals. Naturally, continued use of electrosurgery in operative work adds to the surgical proficiency in the method. The mere possession of an electrosurgical machine by a physician in his office, or by a hospital, for his use, does not mean that that physician or the staff members of the hospital are competent to perform surgical operations. Surgical experience and judgment are still of paramount importance. Knowledge in the use of electrosurgery alone does not mean that one can enter one or all of the special fields of surgery through this gateway. One must have mastered thoroughly the special fields of surgery before one is competent to perform operations by means of electrosurgery. This statement is so obvious that it seems unnecessary, yet there are manufacturers' agents who are selling these machines on the premise that it makes surgery easy and can make a specialist out of any surgeon.

Three things have limited the use of electrosurgery, even in those surgical conditions in which it is definitely indicated and offers the greatest advantages and greatest safety to the patient:

1. The experienced surgeon has become so familiar with the use of the scalpel that he is slow to give up this method for the adoption of another method which requires more or less special training in its use.

2. Too many inexperienced surgeons have adopted electrosurgery, and have used it in special fields wherein they were not even specialists, with an ever increasing number of poor results and an accompanying condemnation of electrosurgery.

3. Many hospitals have bought electrosurgical machines, too often on the advice of the salesman rather than at the special request of a staff member deeply interested in the method. Lukewarmly, various members of the staff have tried to use the machines without first making themselves proficient in the method. The operations were not successful, and, naturally, the staff ceased to use electrosurgery.

Recently a surgeon from a neighboring city visited the clinic with which I am associated, for the purpose of observing electrosurgery in the case of malignant breast tumor. He stated that his hospital had two electrosurgical machines, but, for some reason, the staff was lukewarm about using them. On further questioning, it soon became evident that none of the surgeons on this staff had perfected themselves in the use of these currents. One must guard against overenthusiasm in this method. My associates and I have learned by sad experience not to attempt operations by this method in fields in which the specialist's judgment and his familiarity with the parts involved are of greater importance than simply knowing how to use electrosurgery. Fortunately, there is an ever increasing number of surgeons trained both in their specialty and in the use of electrosurgery to insure an increasing use of the method in the limited number of conditions in which it is definitely indicated.

These warnings cannot be overemphasized. Ward[1] says:

As in any surgical procedure, the essential feature of success in the use of the electrosurgical method in the treatment of malignancy is the development of an accurate judgment as to the extent of the disease and a thorough knowledge of the current being used, and the extent of the after-slough with the chosen current. This is obtained by practice. It is important, however, that any one attempting to develop the perfect technic should have a thorough surgical training. By no means can electrosurgical methods be picked up quickly and in a slipshod manner. One is dealing with a tremendous force which, when rightly applied, produces splendid results, but if carelessly handled, causes disaster.

Skillern,[2] from the standpoint of the specialist, in his discussion "Is Electrocoagulation the Best Method for the Removal of the Faucial Tonsil?" emphasizes these facts as follows:

It is the most difficult and dangerous method in the hands of the inexperienced. The dangers and difficulties are multiple in ratio to the lack of knowledge, and no one who is not capable of removing tonsils by other surgical technic and meeting all complications that may arise during or after the operation should ever attempt their removal by electrocoagulation.

ANESTHESIA IN ELECTROSURGERY

One of the drawbacks frequently mentioned in the use of electrosurgery is the danger of explosions when general anesthesia is used. It goes without saying that electrosurgery should never be used in the same room in which ethylene is being given. One should refuse to use it if ethylene was given in the same operating room within the last thirty minutes. On the other hand, I do not hesitate to use either ether or nitrous oxide anesthesia in all electrosurgical operations except those about the mouth and face. The combination of nitrous oxide and ether anesthesia is not used because, when combined, they are more explosive.

When the indication is for a general anesthetic in a thyroidectomy, performed by electrosurgery, I have used both ether and nitrous oxide on many occasions. The one precaution taken is that a wet blanket hangs between the ether or nitrous oxide mask and the field of operation. A sterile sheet covers this wet blanket. The same is true in breast amputations. This wet blanket should be tucked well around the mask and close to the sides of the patient's face, and down behind the shoulders, so that the ether fumes cannot get under the sterile sheet and run the slight risk of being ignited by the electrosurgery. Careful attention to these details makes the use of ether and nitrous oxide possible in all operations except those in the immediate neighborhood of the mask; namely, the mouth and face.

In the latter situations, a local anesthetic is always used. It may be preceded by morphine, scopolamine or sodium amytal. For the removal of small benign tumors or other lesions on the body, local anesthesia is usually indicated. Patients seldom complain of the electric current under local anesthesia.

WOUND HEALING

From actual clinical observations in a large series of malignant conditions of the face, neck and breast especially, I am convinced that the wound made by electrosurgery is just as free of sepsis as is true of scalpel surgery, but wound healing is slower and, the larger the wound, the slower is the healing. Furthermore, the resulting scar from the incision through the skin by electrosurgery, other things being equal, is just as good as the scar following the scalpel, but the skin wound heals more slowly. Because of this fact, unless there is definite contraindication because of the nature of the tumor, I always make the incision through the skin with the scalpel. In electrosurgery the skin sutures are left in situ for two to five days longer, depending on the extent of the incision. Provisions for drainage of

1. Ward, G. E.: Electrosurgery, chapter 8 in volume 7 of Lewis's Practice of Surgery, p. 10.

2. Skillern, S. R.: Arch. Phys. Therapy **13**: 587 (Oct.) 1932.

serum should always be made when much tissue has been removed, and especially if much coagulation has been necessary.

Burgess of England and John D. Ellis of Chicago have done considerable experimental work in the healing of wounds in electrosurgery. Burgess [3] says:

Provided that an equally rigid aseptic technic be adopted as is employed in scalpel surgery, my experience is that operations performed by electrosurgical methods—the cutting current for the incisional work and the coagulating current for all but the largest vessels, and using fine tungsten wire as the electrode—are attended by primary healing with a frequency at least equal to that of scalpel surgery. On theoretical grounds, one would expect healing to be rather slow since, with the cutting current, there must necessarily be some slight necrosis of the wound surface, however microscopic, which will require to be dealt with by the phagocytes as a preliminary step toward healing. I therefore usually retain the skin sutures two or three days longer than when scalpel surgery has been used, though I am not convinced that this is essential. The ultimate scar can be just as inconspicuous, as supple and as strong as after the scalpel; and some of the scars upon the face and neck of female patients, of the inconspicuousness of which I, and they, too, are most proud, have resulted solely from electrosection.

Ellis [4] writes:

Experimental cuts were made with both types of current on the skin of the human being, dog, rabbit and frog. The first three of these have a skin with a stratum corneum, and, in the presence of this layer, some coagulation results before penetration of the skin can be accomplished, even with a pure cutting current. This coagulation does not necessarily interfere with primary healing, but only 60 per cent of the cuts produced in dog's skin healed by primary intention. The skeletal muscle and muscular layers of the stomach and intestine can be severed by a cutting current without coagulation. The phenomenon of vessel closure with a coagulating current is interesting, involving collapse, shrinkage and agglutination of the vessel walls without extensive thrombus formation. A large amount of thrombokinase seems to be liberated in the cutting of capillaries and small vessels. There are many serious errors to be avoided in the coagulating of vessels. Too rapid coagulation causes explosion and subsequent hemorrhage.

In coagulation of tissues, the specific resistance of the tissues varies tremendously, e. g., fat is more than eight times as resistant as muscle, making the direction of the penetration of deep coagulation uncertain and dangerous.

INDICATIONS FOR ELECTROSURGICAL TECHNIC [5]

Electrosurgery, from a theoretical standpoint, is an ideal method in the majority of major and minor surgical procedures. From a practical standpoint, however, its usefulness is limited by the cumbersome machine, by the lack of trained assistants in its use, and by the fact that in the majority of conditions the scalpel is just as simple and just as safe a method. Certainly, in the hands of the inexperienced in electrosurgery the scalpel is a much safer method in the average surgical operation. I am positive that electrosurgery will never replace the scalpel, scissors and artery forceps. There are certain surgical conditions, however, which I am just as positive can be handled better and more safely, from the standpoint of the patient, by means of electrosurgery.

The chief indications for electrosurgery are found in those cases of malignant conditions located on the skin, in the oral cavity, in the extremities, in the breasts, or in other locations where it is easy to use as an adjuvant to scissors and the scalpel. It is indicated in extremely toxic goiters for the same reason that it is indicated in malignant growths; namely, to seal the blood vessels and the lymphatics and to prevent the entrance of thyroid toxins into the general circulation. It has been used and is sometimes indicated in attacking certain septic conditions for the same reason. A notable example of this is complete excision of the necrotic core of a carbuncle from the back of the neck. It is indicated, according to certain authorities, for the removal of badly infected tonsils or for the removal of tonsils in debilitated patients. Next to malignant conditions, electrosurgery is chiefly indicated for the removal of moles, benign tumors on the surface of the body, and certain types of nevi. Finally, it is indicated in certain conditions in neurologic surgery, chest surgery, gynecology and rectal surgery, in which the elimination of hemorrhage, in order to facilitate the operation, is the chief desideratum.

Some authorities have advocated the use of electrosurgery for many other surgical operations; for example, in amputations, in incising the abdomen, in stomach and intestinal resections, in hysterectomies, in cholecystectomies,[6] and in many minor operations. Space will not permit the discussion of these operations. It will take considerably more experimental and clinical work to convince the majority of surgeons, including myself, that some of these operations can better be performed by electrosurgery than by the usual methods.

The indications for electrosurgery can best be approached, first, from the point of view of the general surgeon and, secondly, from the point of view of the specialist. As a general surgeon, I have used electrosurgery in approximately 500 operations. I am convinced of its value in selected cases; for example, the following:

BREAST

Malignant tumors of the breast can best be attacked by electrosurgery for the following reasons:

(*a*) If, as many people believe, it is possible to disseminate cancerous cells by direct implantation on healthy tissue by means of the scalpel or by dissemination of the cancerous cells through the blood stream or the lymphatics to other parts of the body, any method of operation that will kill the cancerous cells if the tumor is accidentally cut into or which will seal the blood vessels and the lymphatics at the time they are sectioned is certainly the method of choice. Tissue cells that remain on the electrode are immediately coagulated or killed and therefore cannot be transplanted. The cutting current, especially if combined with a slight coagulating current, will not only section the tissues but also seal the blood vessels and the lymphatics at the same time. Thus electrosurgery, not only in breast tumors but in any other type of malignant condition, offers the best means of preventing the spread of the cancerous cells during the period of operation, provided the hypothesis concerning lymphatic and blood stream dissemination is correct. I realize that this is a disputed point.

(*b*) The operating time, after one becomes familiar with electrosurgery, can be reduced approximately one third. One can incise the tissues more rapidly with the cutting electrode than with the scalpel, owing to the fact that the smaller blood vessels are immediately sealed and therefore bleeding does not interfere with

3. Burgess, Arthur: Lancet **2**: 1355 (Dec. 16), 1411 (Dec. 23) 1933.
4. Ellis, J. D.: Electrosurgical Incisions, Arch. Surg. **26**: 981 (June) 1933.
5. Throughout this article the term "electrosurgery" is used synonymously with electrosurgical methods, procedure or technic.
6. Thorek, Max: Electrosurgical Obliteration of the Gallbladder, J. A. M. A. **103**: 169 (July 21) 1934.

the process. The larger blood vessels must be grasped with artery forceps. A dozen artery forceps containing these larger bleeding vessels can be touched by the coagulating electrode, resulting in sealing of the vessel grasped in the forceps in the same time that it would take a fast operator to ligate two of these vessels. It is rare for a vessel thus sealed to bleed again, provided one has not grasped too much of the surrounding tissue in the artery forceps. Time and again I have performed radical breast amputations without using more than two ligatures throughout the operation. Recently, an entire breast amputation was performed without the use of a single ligature. The chief saving of time, therefore, in a radical breast amputation by electrosurgery is found in this method of hemostasis.

(*c*) The absence of pain following a radical breast amputation by electrosurgery is so universally noted that it has caused frequent comment, both on the part of my associates and on the part of the patients themselves. Recently I have operated on the opposite breast in the case of a doctor's sister whose first breast had been removed by the scalpel. She commented time and again on the absence of pain in her second operation as compared with the pain she suffered following the first amputation. True, some patients still complain of pain, but the number who go through their convalescence without a single complaint is noteworthy.

Burgess,[3] in commenting on the advantages of electrosurgery, says:

> In comparison with scalpel surgery, electrosection has, I am convinced, certain advantages, and foremost among these I would place the lesser amount of after pain, not only in the immediate postoperative period but throughout the whole course of wound healing. Dividing nerve fibers by this method seals over their ends in such a way as to render them much less sensitive than after being divided with a knife, and in extensive operation wounds, such as those of large amputations of limbs or radical breast operations, this difference is strikingly manifest.

(*d*) Shock and hemorrhage are less in these radical breast amputations when electrosurgery is used. The reduction of shock naturally follows the reduction of hemorrhage. The diminished afferent impulses along the nerve fibers account for further reduction of shock. Considerable heat is generated in the tissues from the electric current. By the careful protection of the already resected portion of the breast by warm, wet packs, much of this heat can be retained. Without question, this lessens the shock. If one uses a machine that will give both a cutting and a coagulating current, it is possible to do a radical breast amputation without losing a noticeable amount of blood. Unless the operator pays particular attention to securing exactly the right type of current, there may be just as much loss of blood by this method as by the scalpel method. However, I have removed breasts without having a drop of blood on my gown at the end of the operation. In order to secure this result, one must take more time; but too often, in the haste to complete an operation, sufficient attention is not paid to securing this desired current.

In regard to this view, Burgess says:

> I am not convinced that hemorrhage is lessened to any great extent if the purely cutting current only is used. With this, oozing from the capillaries is slightly less and is earlier spontaneously arrested, but vessels of any size require to be picked up with forceps much as in scalpel surgery and either ligatured in the usual way or sealed with the coagulating current. Some high frequency machines deliver a current which is a compromise between the purely cutting and coagulating current, and with these hemorrhage is undoubtedly less, but only because of the greater degree of coagulation produced over the entire wound surface, with its consequent lesser probability of perfect primary union.

In performing a radical breast amputation with electrosurgery, I always make the incision through the true skin with the scalpel. The incision starts at the xiphoid process, extends upward and outward to the lower angle of the breast, passes on either side of the breast—usually 3 to 4 inches from the nipple—and converges again at the upper angle of the breast, and then extends upward toward the clavicle, well above the anterior axillary fold, and curves outward onto the deltoid. This incision, when the wound is finally closed and healed, prevents the scar from extending across the anterior portion of the axilla, a condition that usually limits the abduction and elevation function of the arm. For the same reason, the arm is never bound to the side of the body, but the patient is encouraged to abduct and elevate the arm over the head several times every day after the end of twenty-four hours. It is rarely that a patient has loss of arm function, and it is rare to have a swollen, painful arm, if this plan is followed out. The reason for making the incision through the skin with the scalpel is that the healing of the skin wound is undoubtedly faster than when the incision is made with the cutting current. Bleeding from this incision is slight and is soon checked when the cutting current is applied.

Electrosurgery is now used for the remainder of the operation, with the one exception to be detailed. By means of the cutting and slightly coagulating currents the skin and fat flaps are now dissected away from the breast, the inner flap of the skin being turned back until the midline of the body is reached, and at the upper angle until the inner third of the clavicle is reached. At this upper margin it is resected back until the clavicle itself is exposed. The outer flap of skin is dissected downward and outward until the entire axilla and the margin of the latissimus dorsi are exposed. One may now start the radical amputation of the breast. This may begin by electrosection throughout the insertion of the pectoralis major into the humerus and clavicle, next resecting the insertions of the pectoralis minor and turning these inward on the chest, exposing the axilla. Or, in many cases it may be more advantageous to start the amputation of the breast by cutting through the pectoralis major muscle attachments to the ribs, beginning near the xiphoid process and extending outward over the chest wall, and likewise dissecting the pectoralis minor from the ribs when this muscle is reached, first lifting the entire breast off of the chest wall, leaving all the ribs exposed. These muscles can then be divided from the clavicle and the humerus, the axillary vein and artery having first been exposed to guard against damage to these. Since this dissection is done with the sealing of the lymphatics and the blood vessels, either of these procedures may be followed. The glands and areolar tissue in the axilla immediately below the axillary artery and vein, immediately above these vessels and above the brachial plexus, under the clavicle, and from all other spaces in the axilla surrounding these vessels, are now removed by blunt dissection, as is done when the scalpel is used. As soon as these vessels have been completely exposed by the removal of the glands and areolar tissue, further dissection of the axilla is performed by a combination of blunt dissection and the use of electrosurgery. As one becomes more proficient in electrosurgery, one can use the method closer and closer to these large vessels. There is a certain amount

of the work, however, that must be done by blunt dissection. This is the only weak point in the operation.

When the operation is completed, one has the entire breast and every bit of the areolar tissue and glandular tissue of the axilla completely removed, with the ribs, the axillary artery and vein, and the lower portion of the brachial plexus exposed. A counter opening is made at the lower angle of the outer flap, through which a soft drainage tube is inserted for drainage of this space. The operation is then completed by closing the skin flaps.

There are certain disadvantages that must be mentioned in connection with this operation by electrosurgery:

(*a*) Wound healing is somewhat slower. I have learned from experience to leave the sutures in place for fourteen to sixteen days rather than remove them on the tenth or twelfth day, as is done with scalpel surgery. In only one case has a wound broken completely open after the sutures were removed, and in this case they were removed on the tenth day.

(*b*) In the majority of cases there is more serous drainage than occurs with scalpel surgery.

(*c*) Hemorrhage may follow this method just as it may follow scalpel surgery. In only two cases has there been large hemorrhage, with formation of blood clots filling the axilla. There were no bad results in these two cases, except the delay in healing, due to its being necessary to open a portion of the wound for evacuation of these clots.

(*d*) Caution must be used in removing the pectoralis major and minor muscles from the ribs to prevent cutting or coagulating the intercostal tissue. In one case the current penetrated this tissue, opening the pleura. The small opening was immediately closed by suture, without any bad effect on the patient.

(*e*) Postoperative irradiation is now used in almost all of my cases. Dr. William Brown, radiologist, and I have become convinced that it is better to wait at least ten days before applying radium in these cases. Used earlier, the skin reaction seems more marked, and in one case there was marked sloughing of the skin. This would seem to indicate that there is more disturbance of circulation to the skin by this method.

Only one postoperative death in approximately 200 radical breast amputations, performed either by the scalpel method or by electrosurgery, has occurred. In this case the method used was electrosurgery. On the second day following the operation, a massive collapse of the left lung suddenly occurred and by the next day there was a serous discharge from the wound, cultures from which showed hemolytic streptococci. Death occurred at the end of the third day. At autopsy there was an opening into the pleural cavity, between the third and fourth ribs in the midaxillary line. A rubber drainage tube that had been inserted lay in proximity to this opening. It is my belief that the tissues at this point were weakened by the electrosurgery, and the pressure of the tube against this point caused an ulceration into the pleura. Since then, only the softest rubber drainage tubes have been used, and great caution has been exerted to avoid damaging the intercostal tissue.

THYROID

In 1930 I [7] gave the first published report on electrosurgery in thyroidectomy. At that time only fifteen thyroidectomies had been performed by this method, but since then I have used it in approximately fifty cases. Its use is reserved for cases of marked thyrotoxicosis and for the purpose of preventing the spread of thyroid toxins into the general system by means of sealing the blood vessels and lymphatics while removing the goiter. For the average case that is not highly toxic I prefer the scalpel. It seems that there is less serous secretion with subsequent drainage and better wound healing when the scalpel is used than when electrosurgery is used. In the majority of thyroidectomies I use a combination of the scalpel and electrosurgery. Much time can be saved in this operation by sealing all but the largest blood vessels with the coagulating current, reserving ligatures only for the latter. Without doubt, the use of the scalpel is more artistic and appeals to the surgeon more than the use of the cumbersome electrode. However, I am convinced that electrosurgery should be used in the extremely toxic cases. In thirty-five serious cases, with metabolism rates at the time of operation varying from 35 to 95 and showing extremely toxic symptoms, the operation was performed with electrosurgery without a single case showing the postoperative reaction or crisis that is so terrible to witness in some of these cases when only the scalpel is used. Several surgeons, by personal communication, have testified to the value of electrosurgery in these extremely toxic goiters. Dr. Martin Tinker [8] is quoted by Clark [9] as follows:

> I have found the high frequency knife to be successful in goiter operations. Electrosurgical outfits have been used by a number of outstanding surgeons in this country for a good many years, especially in the management of malignancies. Several advantages have become apparent to many members of the profession, and I believe that shortly the electrosurgical unit will be considered a necessary part of every modern operating room, especially where much goiter surgery is done.

The advantages and disadvantages of electrosurgery in thyroidectomy, as set forth in my previous article, apply in almost all conditions wherein electrosurgery is used. For this reason, these are quoted in full:

> Although this is too small a series of cases to justify positive conclusions, a few definite advantages are apparent.
>
> 1. The time of the operation is definitely shortened by this method through the sealing of the bleeding vessels rather than the use of the time-consuming method of applying ligatures.
>
> 2. In every case, even in the most serious, with marked cardiac involvement, there has been a complete absence of postoperative shock. One patient was in such extreme condition that his family physician called at the hospital just before the operation and begged both the patient and his wife to forego the operation, stating that he would surely die if submitted to this ordeal; yet the patient made an absolutely normal recovery, free from all shock and pain.
>
> 3. A convalescence so free from postoperative pain that even the patient remarks about the complete lack of suffering is almost the universal rule. This result, occurring in a group of patients who are usually emotional, given to complaints and often seeking sympathy, is especially noteworthy.
>
> 4. When one has used the electrosurgical method in the removal of a large number of malignant growths in breasts, tongues, lips and parotid glands, one becomes deeply impressed with the bloodless field, the absence of postoperative shock and the freedom from postoperative pain. The greatest impression, however, and the greatest sense of security, lie in the sealing of the blood and lymph channels simultaneously with the incision in and around the malignant growth. The old fear of opening up channels for the escape of carcinomatous cells to other parts of the body is at once eliminated to a great extent.
>
> The same principle holds true in the removal of a very toxic goiter by the electrosurgical method. There has been no case thus far in this small series that has shown the least evidence of a postoperative thyroid toxicosis. It would seem logical to ascribe this to the same sealing of the blood and lymphatic channels, thus preventing the escape of toxic substances from the cut thyroid gland.

7. Mock, H. E.: Electrosurgery in Thyroidectomy, J. A. M. A. **94**: 1365 (May 3) 1930.

8. Tinker, M. B.: Surg., Gynec. & Obst. **52**: 508 (Feb. 15) 1931.

9. Clark, W. L., in Principles and Practices of Physical Therapy, Hagerstown, Md., W. F. Prior Company, 1934.

I am not yet ready to say that this will be my method of choice in every case of thyroidectomy. I am, however, convinced that it is by far the most rational procedure in all cases of malignant growths susceptible of being attacked by electrosurgery. For the same reasons, it would seem an equally rational procedure in malignant conditions of the thyroid or in severe cases of toxic or exophthalmic goiter.

DISADVANTAGES

1. The machine for the generating of this electric surgical current is large and cumbersome and is transported from one hospital to another with great inconvenience. It is an expensive apparatus and therefore will usually be purchased only by surgeons or hospitals interested especially in malignant conditions or by those who may come to recognize its value in thyroidectomies. Its general usefulness is therefore greatly limited.

2. The surgeon must have at hand a carefully trained assistant who understands the mechanism and who can manipulate the various switches that modulate the current from a light cutting stage, through intervening stages, to a heavy coagulating current. Unfortunately there are only a few persons thus far trained to operate this particular machine.

3. It requires considerable experience to use just sufficient current to make a clean-cut incision in the skin that will heal as readily and with as little remaining scar as follows a properly executed scalpel incision. With practice, however, this can be accomplished. If too strong a coagulating current is used in sealing the blood vessels, one may have a greater amount of serum drainage than is the rule when hemostats and ligatures are used. Here, again, experience with the current is necessary to overcome this difficulty.

4. Care must be used not to allow the current to come in contact with a hemostat lying across the skin or a metal retractor; otherwise, cooking of the skin or of the tissue under the retractor will follow to a degree depending on the strength of the given current. This of course can be easily avoided.

OTHER MALIGNANT CONDITIONS

Electrosurgery is adaptable to a considerable number of other malignant conditions, as follows:

Malignant Conditions of the Tongue.—All malignant conditions of the tongue susceptible for removal with the scalpel can be attacked with the cutting current, or better, the cutting and slightly coagulating current, equally well. As much as two thirds of the tongue has been removed by electrosurgery with very little hemorrhage and very little more sloughing than follows the use of the scalpel. A wide removal of the malignant tumor is indicated, and this can best be done by sealing the lymphatics and blood vessels with the electric current at the same time the tumor is removed. Extensive tumors, requiring resection of the mandible for their attack, have been removed by means of electrosurgery.

Radical dissection of the glands of the neck may be performed by a combination of scalpel and blunt dissection and electrosurgery. Removal of an isolated gland of the neck after it has been exposed can well be performed by electrosurgery.

Malignant Conditions of the Lips.—There are many malignant conditions of the lips that can best be treated by radium. In many of these, consultation with a dermatologist is definitely indicated. There are certain malignant conditions of the lip, however, that must be widely resected. A number of these have been removed, the entire operation being performed by electrosurgery, including the incision of the skin. As a rule, a slight incision through the skin can be made by the scalpel, and then the cutting current is resorted to. However, with a pure cutting current quickly drawn through the skin, there is little delay in healing, and the resulting scar is practically as good as when the scalpel is used.

Malignant Conditions of the Face.—A number of extensive malignant growths about the nose, cheeks, parotid gland and ears, and involving the eye, have been attacked by means of electrosurgery. Some of these have been so extensive that no effort at operation would have been made if scalpel surgery alone was available.

Some of these tumors can be completely excised and the wound closed. In one case of extensive malignancy of the nose and eyelids and involving the orbit, the entire dissection was done, including the enucleation of the eye and the cleaning out of the orbit, with electrosurgery. The wound was left open to granulate. Within two weeks there was such a good granulating surface that a pedicle graft was turned in to close the defect of the orbit, and Thiersch grafts were applied to the granulating surface of the nose. The resulting defect was not repulsive. This patient lived five years, and at the time of his death from pneumonia had no evidence of recurrence. Without doubt, electrosurgery offers the means of attacking some of these extensive, foul-smelling, ulcerating growths with considerable relief to the patient and the prolongation of his life. In many of these, surgery with a scalpel would be contraindicated.

In these lesions, as well as in malignant growths of the tongue and the lip and other skin cancers, one may prefer to coagulate thoroughly the entire cancer. By introducing the needle at various places around the margin of the cancer and working from the margin toward the center, and after the tumor is thoroughly coagulated, the cutting current may be used to incise the charred tumor mass. This method is indicated in certain of these tumors and is the method that is preferred by many operators. The wound remaining when a tumor is thus treated is usually left open and allowed gradually to close.

There have been a few cases of cancer of the breast of a year or more standing in which large ulcerated, foul-smelling areas have been removed by electrosurgery. Some of these have been recurrences following a radical breast amputation. These foul-smelling, ulcerated areas can be completely removed by means of electrosurgery with little hemorrhage if the current is damped, or made partly coagulating, and a large granulating area is left behind, which, in one case, healed sufficiently to allow skin grafting. Many of these patients can be relieved of their discomfort and suffering by this palliative operation, made possible only by electrosurgery.

Electrosurgery has been used as an adjunct to ordinary surgery in resection of the stomach, resection of the bowel, and resection of the rectum in the presence of malignant growths. After the mass is once freed, usually by careful scalpel and scissors dissection, its removal can be facilitated by resorting to electrosurgery.

NONMALIGNANT CONDITIONS

The chief nonmalignant conditions in which electrosurgery has been used have been moles, small benign tumors of the skin, excision of ulcerated areas following radium burns, two cases of plantar warts, and a few cases of large hemangiomas.

Recently a hemangioma that was slightly larger than an egg and was raised about half the height of an egg, and which was located on the front of the chest of a girl, aged 4 years, was removed. An elliptic skin incision was made by means of a scalpel around this nevus, completely outside the discolored area. The complete dissection of the nevus, down to the pectoral

muscles, was then made with electrosurgery. The cutting-coagulating current was used, and the entire mass was removed without a particle of hemorrhage. No ligatures were necessary after its removal. The skin margins were then undermined with the cutting current, and the wound was completely closed, giving only a hair-line scar, which, in time, will fade and will leave no noticeable defect. A similar nevus, about half the size of this one, was removed from a child's forehead with the same result. In the first case, Dr. William Brown, radiologist, was consulted before the operation was performed. It was his opinion that he could reduce the elevation of the nevus and the discoloration of the skin about 80 per cent, but could not eliminate the condition completely. He was consulted because I have referred several small nevi to him with their complete eradication by means of radium. His opinion, therefore, was valued. Other nevi removed by this method have shown no signs of recurrence. In my opinion it is definitely indicated in the larger nevi that cannot be eradicated with radium.

Burgess says: "In surgery of nonmalignant and noninfected conditions we are upon more debatable ground, and it has been in an attempt to ascertain for myself the possibilities of electrosection in general surgery that I have used it so largely and in such a variety of operations during the past six years." He has used the method a number of times in amputations of the extremities and stresses the point that there is less shock and less after-pain. He prefers it in operations on sensitive regions, such as the anal canal and says: "The pain following operations for hemorrhoids, particularly that associated with the first action of the bowel, is markedly alleviated."

ELECTROSURGERY IN THE SPECIALTIES

Electrosurgery outfits have become a necessary part of the armamentarium of many of the specialists in surgery. There are certain operations in various fields wherein electrosurgery is now the only method used.

Brain Surgery.—In 1931 Dr. Harvey Cushing [10] published his article entitled "Electrosurgery as an Aid in Removal of Intracranial Tumors." Since then this method has been adopted by the majority of brain surgeons for attacking certain types of intracranial tumors. Cushing says:

> During the two years just elapsed since we hesitatingly began to employ electrical currents in craniocerebral surgery, 547 operations for tumors have been performed. Though for some of these operations the electrical methods were not essential, there were few of them, even when no tumor was found, in which they could not have advantageously been employed.

Dr. Ernest Sachs, in discussing a paper on this subject before a recent meeting of the American College of Surgeons, said: "Electrosurgery is the most important addition to neurosurgical technic that has been devised in many years."

Dr. Loyal Davis [11] says:

> 1. Electrosurgery is a distinct addition to the neurologic surgeon's armamentarium. It does not, however, completely supersede the well established principles of osteoplastic cranial cerebral surgery.
>
> 2. At present it may be employed to its greatest extent in the removal of meningiomas, in particular to the relatively inaccessible meningiomas.
>
> 3. The improvement of the use of electrosurgery in the treatment of gliomas offers the possibility for its greatest contribution to the surgery of the nervous system.

10. Cushing, Harvey: Surg., Gynec. & Obst. **52**: 129 (Feb.) 1931.
11. Davis, Loyal, in Principles and Practice of Physical Therapy.

These authors and others who have written or spoken on the matter mention many of the disadvantages that have been previously brought out in this article. Davis points out the danger of electrosurgery leading to less meticulous care in the handling of these serious brain conditions. It must be stressed here, as elsewhere, that electrosurgery cannot be used safely in neurologic surgery unless one first is a thoroughly trained neurologic surgeon.

Eye.—Surgical diathermy has proved itself in the field of the ophthalmologist. Walker [12] has said:

> Three years ago, surgical diathermy could have been dispensed with by the ophthalmologist and practically all the numerous valuable treatments which it provides could have been imitated and approximated by other treatments already at hand. Now, it has been definitely established, with the addition of separated retina to the list of surgical diathermic treatments, by the work of Larsson, Weve, Safár and others, so that the ophthalmologist can hardly afford to ignore the subject longer from a practical standpoint, or, if surgically inclined, he should not be without recourse, either in office or hospital, to at least the more economical surgical diathermic equipment.

Throat.—Tonsillectomy by electrocoagulation has no doubt been abused. All of us have been questioned by the laity as to this easy, simple method. Skillern [2] has best covered this subject:

> I have talked to many laryngologists who are using this method, and they all tell me they have difficulty in removing the last vestige of tonsil, as it is very perplexing to differentiate tonsil from the surrounding tissue. If the experienced tonsil operator has difficulty, what must the occasional tonsil coagulator have when he reaches that remaining portion of the tonsil stump buried deep in the fossa and covered by a stiffened anterior pillar?

Dillinger, the champion of electrocoagulation for the removal of the tonsils, says: "This method requires more skill and training than the ordinary surgical tonsillectomy, and no one except a throat specialist should attempt to use diathermy in the throat."

Beals speaks of the general practitioner being misled, because he believes he can easily master this apparently simple but in reality arduous method, and decries the unethical manufacturer adding chaos by sending out high pressure salesmen to sell to any one for the sake of a sale.

Coates, in discussing this paper, advocated that the laryngologist should include electrocoagulation to keep it out of the hands of those who are not qualified.

Myers reported thirty casualties and says that it is no method for the neophyte.

In spite of all this advice and warning by the leading men of the country, the manufacturers continue to install their machines wherever the salesman can procure an order.

When the public learns of the dangers and complications that may occur during the removal of tonsils by electrocoagulation, and, what may be even worse, leaving a buried focus of infection from an incomplete removal, it will shun this operation as it would a rabid dog, and the laryngologist will have difficulty in persuading the person with an otherwise inoperable condition to accept this method as the operation of necessity.

Occasionally cases are referred in which there is a history of advanced tuberculosis, exophthalmic goiter or myocardial degeneration requiring the removal of the tonsils. Electrocoagulation is the salvation of these patients.

12. Walker, C. B.: Am. J. Ophth. **17**: 1 (Jan.) 1934.

Again, there is the patient who has an actual horror of a hospital or a real fear of a general anesthetic but refuses a local anesthetic, as the sight of the instruments fills his very soul with terror. Here again electrocoagulation with its multiple applications of the needle cannot be mentioned in the same category with that of a clean surgical tonsillectomy by a trained operator.

I consider electrocoagulation a method of removing the tonsils that every laryngologist should master, as he will find it is necessary to remove them occasionally by this procedure. It should be spoken of not as the operation of choice but as the operation of necessity. It is the most difficult and dangerous method in the hands of the inexperienced. The dangers and difficulties are multiple in ratio to the lack of knowledge, and no one who is not capable of removing tonsils by other surgical technics, and of meeting all complications that may arise during or after the operation should attempt their removal by electrocoagulation.

I have used electrosurgery in one case of carcinoma of the tonsil. This condition should be added to the definite indications for electrosurgery, and the same method is certainly indicated in all malignant conditions of the throat.

Chest.—Electrosurgery is receiving a great deal of attention by specialists in thoracic surgery, especially for the removal of tumors or for the excision of a lobe when indicated, as, for example, in lung abscess. The following quotation from Matson [13] shows the importance of this method in chest surgery:

> My experience with the electrosurgical method has given me confidence in this method of cutting adhesions. Control of bleeding is the most dangerous problem and requires thorough knowledge of the character of the currents used. Electrosurgical cutting is accomplished without heat or smoke to disturb the view. There is a minimum of tissue reaction afterward, and while more complicated and technically more difficult than the galvanocautery method, it is without doubt a notable advance in this branch of surgery, which is being more widely employed.
>
> Intrapleural pneumolysis by the closed method is not a foolproof procedure with either the galvanocautery or the electrothermic method. The operator must be familiar with the appearance of the pleural cavity and at all times perfectly orientated regarding the nature of tissue to be cut. This training in the use of the thoracoscope in the pleural cavity is just as important to the surgeon or physiotherapeutist as a thorough knowledge of the cystoscopic image is to the urological surgeon. The operator should have experience with pneumothorax and must have surgical training.

Genito-Urinary.—Electrosurgery has been used for years by many genito-urinary specialists for the removal of papillomas of the bladder and malignant growths of the bladder. In 1926 Harry Culver and I attacked a large, otherwise inoperable, carcinoma of the prostate and bladder wall with the cutting-coagulating current. The whole mass was completely excised, including considerable bladder wall. The patient, aged 76, was seen two years ago. He had lived seven years without any sign of recurrence and with the cystotomy wound completely healed. Corbus [14] was a pioneer in the use of surgical diathermy in many different kinds of genito-urinary conditions. He has writen extensively on the treatment of gonorrhea by diathermy and on the removal of bladder tumors by this method. In more recent years, electrosurgery has come into prominence in genito-urinary work for transurethral resection of the prostate.

In 1933 Kretschmer [15] gave his conclusions following 216 transurethral electric resections, as follows:

> Age Incidence: This paper is based on a series of 216 transurethral electric resections performed on 198 patients. The youngest patient in this series was 30 years of age and the oldest 89.
>
> Postoperative Course: Reactions following transurethral resections are generally very mild. Temperature reactions are less frequent than after prostatectomy, and, when they do occur, are less severe and do not last so long. In 117 resections in this series, the temperature lasted only from one to two days.
>
> Hemorrhage: As a rule, the urine remains blood tinged for a few days. Our efforts are toward sending the patient back to the ward relatively free from bleeding. As a rule, the urine is no longer blood tinged after the third day. In the occasional case it may be necessary to irrigate the bladder and to evacuate clots, but this depends upon the care exercised in controlling the bleeding at the time of the operation.
>
> There was only one case in the 216 resections in which it was necessary to do a suprapubic for the control of hemorrhage, and that occurred early in the series. Primary bleeding can be controlled at the operating table. Secondary bleeding, that is, bleeding which occurred between the tenth and the fifteenth day, was present in only seven out of the 216 resections. In six of them it was only necessary to evacuate the clots and irrigate the bladder with hot permanganate. In one case, a man with carcinoma of the bladder, it was necessary to resect the bleeding point.
>
> Average Postoperative Stay in the Hospital: No attempt was made to hurry the patients out of the hospital. The records show that the shortest stay in the hospital was two days, and the average stay six and one-half days. These figures refer to the straight resection cases.
>
> The group prepared by suprapubic cystostomy had a slightly longer stay, since to the resection is added the time necessary for the suprapubic fistula to heal. These cases had an average stay of fifteen days.
>
> Summary: The results obtained justify the statements that have repeatedly been made to the effect that this new form of treatment carries with it a much lower mortality rate, and this in spite of the fact that many patients are operated upon by this method late in the progress of the disease, the delay having been caused because they had been told by the surgeon in charge that the case was inoperable. The records show that the mortality was only 2.77 per cent following 216 transurethral resections.

Dr. Harry Culver has furnished the following statement concerning the present status of electrosurgery in prostatectomy:

> Electrosurgical methods applied to the genito-urinary tract have been in common usage for many years. It has been only within the last several years, however, that adequate electric current was available for other than electrocoagulation. Gradually loop resections of bladder tumor were done through an open bladder and even transvesical loop resections of obstructing prostatic carcinoma.
>
> More recent developments have produced a current that will cut under water. This characteristic, together with a gradual development of nonelectrical transurethral operations, has resulted in the present status of transurethral resections of the prostate gland and certain tumors of the bladder.
>
> All workers in this field are of the opinion that prostatic bars and prostatic carcinomas should be handled by the transurethral electro method, some being of the opinion that these two obstructions only should be handled by this method. The question of the removal of prostatic hypertrophies is one which, up to the present time, has not been thoroughly settled. There are enthusiasts of this method who operate on all hypertrophies, regardless of size or type, if it is physically possible to pass the necessary urethral instruments, and a more conservative group that confines their transurethral operations to relatively

13. Matson, R. C.: The Electrosurgical Method of Closed Intrapleural Pneumolysis in Artificial Pneumothorax, Arch. Surg. **19**: 1175 (Dec., part 2) 1929.

14. Corbus, B. C., and O'Conor, V. J.: Diathermy in the Treatment of Genito-Urinary Diseases, St. Paul and Minneapolis, Bruce Publishing Company, 1929.

15. Kretschmer, H. L.: Illinois M. J. **64**: 439 (Nov.) 1933.

small hypertrophies, especially of the middle lobe type. Obviously there are many urologists whose work in this connection would place them all along the line between these two extremes. It would seem, after careful study of the present status of this method, that it is here to stay, but whether it will gain or lose in popularity will depend altogether upon the permanence of the relief obtained.

Gynecology.—In conversations with many gynecologists, one is impressed with the fact that electrosurgery is not used in this field to the great extent indicated by certain authors. There are evidently only a few gynecologists who have used electrosurgery in the usual gynecologic operations, such as hysterectomy, oophorectomy and salpingectomy. A large number of gynecologists have combined electrosurgery, either with x-rays or with radium, in attacking cervical carcinoma and large, otherwise inoperable carcinomas of the fundus. Here, again, surgical judgment, a thorough understanding of electrosurgical procedures and the specialist's knowledge in this field of surgery must be combined. The possession of an electrosurgical apparatus and knowledge of its use alone do not fit one to attack these major gynecologic operations.

Grant E. Ward [1] has recommended electrosurgery in the following gynecologic conditions:

Urethral Caruncle and Redundant Urethral Mucosa: In treating either condition, a local injection of 1 per cent or 2 per cent procaine hydrochloride is first made, inclosing a wide margin beyond the disease, frequently requiring injection all the way around the urethral orifice. The caruncle is excised with a strong cutting-coagulating current.

Redundant mucosa is quickly destroyed by applying the monoterminal heating current directly to the surface, using a sharp needle electrode.

A thin, flat electrode, one-half inch long and one-eighth inch wide, is placed in direct contact with the mucosa. A slow biterminal current is preferred, as the entire depth of the mucosa should be destroyed.

Venereal Warts: Local anesthesia is necessary here. The warts dry up quickly under the application of a monoterminal desiccating current.

Cysts: Bartholin's gland cysts are opened with the cutting current with very little or no bleeding.

Infections in Skene's and Bartholin's Glands, causing recurrent infections in the urethra and cervix: A long, thin needle is inserted to the depth of the gland, the current turned on and continued until the tissues adjacent are blanched, indicating dehydration.

Endocervicitis: In the more mild cases, the canal and external os are cleaned up with a biterminal current under local anesthesia.

Polyps: Small vaginal or cervical polyps are readily destroyed with a short, thick monoterminal current.

Electrosurgery in hemorrhoidectomy has now been used in a considerable number of cases. In some of these the mucosa has been excised, exposing the varicosed hemorrhoidal vessel, and this has been dehydrated or, in other cases, slightly coagulated, and an effort made to close the mucosa over the area. To be successful, the electric current used must be a very light one, and the operation is rather prolonged. If a strong coagulating current is used, there is danger of considerable slough and scar formation. In more recent years, electrosurgery has been used in connection with the clamp, quite similar to the old clamp-and-cautery operation, in the majority of the cases of large hemorrhoids. I am not convinced that electrosurgery, other than as an adjunct, offers many great advantages over other surgical methods of removal of hemorrhoids.

Ward [1] says:

It should be noted in passing that large internal and external hemorrhoids can be dehydrated (desiccated) under local anesthesia in the office. One or two hemorrhoids require only local injections about them, whereas multiple ones necessitate injections around the anus and up above the internal sphincter. The sphincter muscle is then dilated, releasing the spasm which causes the hemorrhoid. A desiccating monoterminal current—a short, thick spark—is preferable, being applied by a suitable needle electrode. The needle is thrown into the hemorrhoid and allowed to remain until the blood is dehydrated sufficiently as to clot. Larger hemorrhoids require clamping with any suitable hemostat, stagnating the blood and rendering dehydration and clotting more prompt.

In my experience there are few hemorrhoids that are suitable for operation in the office. From observation and from conversation with many other surgeons, I feel that an erroneous impression has been given to the profession at large to the effect that electrosurgery has made hemorrhoidectomy a simple procedure, possible of being carried out in the office.

Clark [16] qualifies the use of electrosurgery in hemorrhoidectomy as follows:

The following technic for hemorrhoidectomy is almost identical with that of the clamp and cautery operation, except that electrodesiccation is used as the active agent instead of cautery.

Technic: The usual preparation of the patient is carried out. Local infiltration anesthetization by classical technic may be employed, although in some supersensitive individuals a general anesthetic, preferably ether, is used. Caudal anesthesia is preferred by some operators. After stretching the sphincter muscle sufficiently, each hemorrhoid is pulled down in turn by means of suitable tenacula, and the pile is clamped at its base in the direction of the muscle fibers, which are at right angles with the anus. The pile is then electrodesiccated (by the technic described for other lesions) down to the clamp. The clamp is then removed and the hemorrhoid is permitted to slough away, or it may be excised at once not quite down to the clamp. The latter method is preferred. Postoperative hemorrhage is not greatly to be feared, there is no resulting cicatricial contraction, and as a rule postoperative discomfort is not great. In some cases, however, it is greater than in others. Patients should be hospitalized and remain in bed for a few days as a safe precautionary measure. The electrodesiccation method for removing hemorrhoids is an advance over the Whitehead ligature, clamp and cautery operations and the injection methods, for the radical cure of hemorrhoids.

The electrodesiccation technic described has been found to be more satisfactory for hemorrhoidectomy than the more intense electrocoagulation method. The practice of passing the bipolar, high amperage current (diathermy) through a metal clamp, after the hemorrhoid is engaged in the clamp, is not as satisfactory as the method described, owing to the possibility of unnecessarily electrocoagulating tissues adjacent to the hemorrhoids, the greater inflammatory reaction, and the possibility of subsequent contracture of the lumen of the rectum.

There are many fissures, fistulas, papillomas, ulcers and certain malignant lesions of the rectum that can be attacked by electrosurgery. In resections of the rectum for a malignant condition, either with or without cholostomy, electrosurgery, when its use is thoroughly understood by the operator, offers the best method of attack. In localized malignant lesions here as elsewhere, great care must be exercised that the tumor is completely eradicated. If not, these localized growths are simply coagulated or cooked over, leaving the tumor base intact for direct extension or metastasis.

Skin.—Without question, electrosurgery has been used in lesions of the skin to a greater extent than in any other field of surgery. It furnishes one of the simplest and easiest methods for the removal of moles. The monoterminal electrode is used, and the mole is dehydrated. It is natural that, from this simple pro-

16. Clark, in Principles and Practice of Physical Therapy, chapter 20, p. 1.

cedure, the operator is led on to attempt operations on many other skin lesions, especially epitheliomas. The majority of epitheliomas, however, can best be removed by the dermatologist by means of x-rays or radium. I believe therefore that electrosurgery should be reserved for those larger malignant skin lesions which are turned over to the surgeon by the dermatologist because the latter feels that surgery rather than the usual dermatologic procedures is definitely indicated. It is necessary to emphasize that too many malignant skin lesions are only half attacked by electrosurgery, in the hands both of the dermatologist and of the surgeon. Team work with the dermatologist is the best way for the surgeon to meet this situation. If either of them decides on using electrosurgery, the lesion must be widely excised, either with or without coagulation of the tumor proper. When coagulation of the tumor alone is done, it is impossible for the operator to know positively that he has completely eradicated the entire tumor.

Predicated on a thorough understanding of its dangers and limitations, electrosurgery attains its greatest scope of usefulness in surgery of the skin and mucous membranes.

Logical and sane advice is given by MacKee and Cipollaro [17] in both benign and malignant conditions of the skin. Regarding verrucae, keratosis, hypertrichosis, and moles they say:

> Carelessness and ignorance when applied to medical diathermy may result in undesirable injury to the skin and even to the underlying structures. Surgical diathermy (electrosurgery) may cause injuries which are objectionable, painful, disfiguring and, at times, dangerous. . . .
>
> When employing electrocoagulation, the operator must take care that he does not destroy unnecessarily important, normal, adjacent tissue. Also, hemorrhage must be guarded against. During the application of the current, there is no hemorrhage because small vessels are occluded, but a large adjacent vessel may be damaged just enough to cause a severe postoperative hemorrhage.
>
> The cutting current seals the small vessels but not the large ones. Hemorrhage from the large vessels can be controlled often by touching the vessel for a second or two with a strong desiccating or monoterminal coagulating current. However, it is preferable to ligate large vessels, either before or during the operation.
>
> The coagulating and desiccating currents seal the lymphatic vessels completely. The cutting current does the same, but not so thoroughly. Advocates of electrosurgery believe that this instantaneous occlusion of lymphatic vessels prevents metastasis of malignant tumors. This is probably true when every part of the growth is accessible and the method is properly applied. As yet there has been no large collection of convincing statistics, however, to prove the contention. When dealing with an accessible malignant tumor, it is customary first to coagulate the tissue beyond the circumference of the growth by means of electrocoagulation or electrodesiccation, depending upon the size, depth and location of the lesion. The tumor is then thoroughly coagulated or desiccated, and the entire mass is removed with a curet or scissors (if small), or with the cutting current. Finally, the wound is electrodesiccated and dressed. It is usually advisable to remove tissue that has been thoroughly coagulated or desiccated, in order to prevent subsequent infection.
>
> Electrosurgical enthusiasts believe that all biopsies, when there is any possibility of malignancy, should be made with the cutting current. This is not the opinion of such cancer experts as Francis Carter Wood, Douglas Quick, and such pathologists as Walter Highman, J. Frank Fraser, David Satenstein, and others, who are convinced that there is no danger in removing a piece of tissue from a malignant tumor with a sharp scalpel or a sharp biopsy punch as long as the lesion is not massaged, squeezed or roughly handled. Furthermore, small pieces of tissue removed with a cutting current are likely to be so badly damaged as to be almost worthless for detailed microscopic study. With large pieces of tissue, the center is usually unaffected by the cutting current.

I would reemphasize the fact that biopsies can be obtained by means of electrosurgery which are equal to biopsy material secured by the scalpel. Dr. Howard T. Karsner [18] states that "the thin film of coagulation is so slight that it does not interfere at all with biopsy studies, and, as a rule, there is less distortion of the tissues than is the case with scalpel biopsy." I would likewise refer to the article by Weidman and Guequierre,[19] which also thoroughly supports this view. A word of caution, however, should be offered. If the bits of tissue are small, the injury to them may be such as to prevent satisfactory microscopic examination. Allowance should always be made for the zone of coagulation and destruction.

Continuing, MacKee and Cipollaro say:

> The advocates of the cutting current aver that the incision may be sutured and that primary union will follow. This is true, but primary union very often fails. It is less likely to fail if the incision is freshened with scissors or a curet before it is sutured. . . .
>
> Major electrosurgery requires the same attention to asepsis as does major scalpel surgery. Minor operations do not necessarily require the same degree of asepsis. Nevertheless, it is advisable to employ the same care in this respect in minor surgical diathermy as in minor scalpel surgery, both during and after the operation. Even in such a simple procedure as the surgical desiccation of a small, superficial skin lesion, it is advisable, at least, to paint the area with iodine. If alcohol is used, the current should not be applied until the alcohol has been removed by evaporation or with a piece of gauze.
>
> Keloids and hypertrophic scars are rather common subsequent to surgical diathermy, especially after electrodesiccation. It is well to inspect the scar weekly for a month or two and to apply radium or x-rays at the first evidence of hypertrophy.

CONCLUSIONS

1. Electrosurgery offers a distinct advantage over scalpel surgery in a limited number of surgical conditions.

2. Surgeons must understand the differences between the dehydrating, coagulating and cutting currents and must learn through much experimentation how to control and use these various currents before attempting to do electrosurgery.

3. Knowledge in the use of electrosurgery is of secondary importance to surgical experience and judgment. The possession of an electrosurgery apparatus and a little instruction by a manufacturer's agent does not fit one to attempt surgical operations by this method. No physician not thoroughly trained in scalpel surgery should attempt electrosurgery.

4. Electrosurgery is useful in many operations in the various fields of special surgery. Here again the specialist's knowledge and surgical experience are of paramount importance before attempting to use electrosurgery.

5. Electrosurgery is the best means of attacking malignant lesions of the skin, breast, the various orifices, and even the deeper malignant lesions after they have been exposed by scalpel surgery. It has proved of great value in neurologic, thoracic, genito-urinary, skin and thyroid surgery. It has a limited field of usefulness in many of the other specialties.

122 South Michigan Avenue.

17. MacKee, G. M., and Cipollaro, A. C., in Principles and Practice of Physical Therapy, volume 1, chapter 18.

18. Karsner, H. T.: Personal communication to the author.

19. Weidman, F. D., and Guequierre, J. P.: High Frequency Currents in Performing Biopsies, J. A. M. A. **103**: 1693 (Dec. 1) 1934.

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SATURDAY, JUNE 29, 1935

POLICIES ADOPTED BY THE HOUSE OF DELEGATES

The annual session of the American Medical Association held in Atlantic City, June 10 to 14, was extraordinary from the point of view of its contributions to the advancement of medical science and as a demonstration of a well-nigh perfectly organized meeting. Letters are pouring into the headquarters office expressing commendation of the Scientific Exhibit and of the lectures presented in the General Scientific Meetings.

The House of Delegates functioned efficiently and completed its business with such celerity that many observers commented on the apparent quiet of the proceedings. This was no doubt due to the fact that the reference committees were so well selected and so assiduous in the performance of their duties that most difficulties were ironed out in the committees. Many listened for hours to those representing various points of view, and the reports which they brought in took cognizance of these expressions and were therefore adopted without opposition from the floor.

In THE JOURNAL, June 22, appeared the reports of the first session of the House of Delegates, wherein resolutions were introduced on radio broadcasting, contraception, medical care and the teaching of medical economics. The House of Delegates encouraged the Board of Trustees to do its utmost to control the broadcasting of fraudulent claims for pharmaceutic preparations and to eliminate the broadcasting of claims for alleged cancer cures from Mexico. By the action of the House of Delegates the Board of Trustees was authorized to appoint a committee to study problems concerned in contraception and to present a preliminary report to the House of Delegates at the 1936 session. The chairman of the Legislative Committee described in his report, which appears in this issue of THE JOURNAL, the manner in which the Association has cooperated with the American Legion and the Veterans' Bureau in relationship to medical problems affecting these groups. He described also the steps that have been taken to bring various medical organizations into accord with the policies of the American Medical Association relating to economic problems. The Bureau of Medical Economics, pursuant to the action taken at the special session of the House of Delegates held in Chicago in February, presented at this time a report on more than two hundred plans now in operation in various parts of the country in an attempt to provide all the people with adequate medical care. This report of the Bureau, with various modifications, was adopted by the House of Delegates and will appear in an early issue of THE JOURNAL.

The actions of the House of Delegates as reported in last week's issue and in this issue of THE JOURNAL are given in considerable detail. It is desirable that all those who are interested in the policies of the American Medical Association make a thorough study of these reports and familiarize themselves with the problems concerned. Only to the extent to which all the membership of the Association is familiar with these activities and supports them can the Association function efficiently.

PUBLIC HEALTH UNDER THE ECONOMIC SECURITY BILL

Two sections of the Economic Security Bill[1] are specifically devoted to public health: title V, which deals with maternity and child welfare and the care of crippled children and which is to be administered by the U. S. Children's Bureau, and title VI, which has to do with public health programs in state and local communities and which is to be administered by the U. S. Public Health Service. Both sections provide for federal subsidies to states and territories in varying amounts and under varying conditions. In order to set in motion machinery for the administration of the act, a conference was called by the Surgeon General of the U. S. Public Health Service and another by the Chief of the Children's Bureau, both conferences meeting in Washington, D. C., immediately following the meeting of the State and Provincial Health Authorities of North America at Atlantic City. Representatives of the American Medical Association, including two trustees and two members of the headquarters staff, were invited and were in attendance at both conferences.

Title VI of the Economic Security Act provides ten million dollars for preventive medicine to be administered by the U. S. Public Health Service. Of this, two million dollars is to be used by the service itself for research purposes and eight million dollars for aid to states. It is contemplated that this eight million dollars shall be used for aid to the state and territorial health departments in providing adequate facilities especially for the promotion and administrative guidance of full time city, county and district health services, to strengthen the service divisions of state and territorial

1. H. R. 7260 (Report No. 628) Calender No. 661, Seventy-Fourth Congress, first session.

health departments and to aid city, county and district health departments. The administrative plan advanced by the U. S. Public Health Service, as amended and accepted by the Conference of State and Provincial Health Authorities, provides six basic requirements for a state or territorial health department: namely, a qualified full time health officer; adequate provision for administrative guidance of local health services; acceptable vital statistics service; acceptable state public health laboratory service; special services for study, promotion and guidance of local activities for preventable disease control; and study, promotion and supervision of environmental sanitary control. Similar provisions are made with relation to city, county and district health departments.

The financial allotments are under five major divisions. First is a flat grant, under which $400,000 will be allocated among the fifty-one divisions (that is, forty-eight states, the District of Columbia, Alaska and Hawaii), amounting to $7,843 for each jurisdiction. This money is an outright grant, not to be matched by state funds. The sum of four million dollars is to be allotted to the states on a per capita basis and must be matched by state funds in two ways; that is, two million dollars on a per capita basis to be matched dollar for dollar from existing appropriations for state health work and another two million dollars allocated on a per capita basis but to be matched dollar for dollar with new appropriations, except that where a state has already customarily appropriated liberally for public health work the requirement of new appropriations may be waived and the state may receive its allotment by matching dollar for dollar with existing funds. The sum of $1,200,000 is to be allotted for the purpose of equalizing the burden of public health work in accordance with economic conditions and needs of the states and territories, this having been determined by expressing by states the total income of the population on a per capita basis and determining the need of the individual state by its deviation from the median per capita income of the fifty-one state and territorial jurisdictions. Another $1,200,000 is to be allotted to the states and territories on the basis of such geographically limited health problems as hookworm, malaria and plague; this is to be matched by state and local funds. An additional $1,200,000 is set aside for purposes of training and provision of reserve personnel. Payments to states from allotments will be made dollar for dollar only to the extent that these funds are actually called for by plans submitted and approved.

To summarize: The outright gift to the fifty-one health jurisdictions and the equalization fund based on financial requirements need not be matched by state and local funds; other allotments must be matched, but exceptions may be made in the matching requirement with respect to the population-basis allocation of funds. The training fund will be administered by the U. S. Public Health Service; allotments will be made to the several states but need not be matched.

The conference recognized that the most pressing need in connection with the administration of programs under the act would be qualified personnel. No adequate reservoir of qualified personnel exists. Therefore a special committee was charged with the duty of drawing up qualifications for personnel. These qualifications were accepted by the conference for four principal classes of personnel; namely, medical, nursing, engineering, and technical and sanitary. It was further recognized that there exists not only a dearth of qualified personnel but a total inadequacy of training centers for the training of those who may be desirous of meeting the qualifications established. Under the act the U. S. Public Health Service is empowered to strengthen existing training centers and to establish new ones for the training of personnel to carry out the purposes of the act in the state and local health jurisdictions. Sound progress depends on providing trained personnel, and haste in the expenditure of funds merely because they are available will be fatal to the success of the program. A provision in the act which makes unexpended funds available until the end of the second fiscal year seems to favor careful and considered deliberation in the execution of the purposes of the act.

A committee on uniform record forms also was created and presented a report to the conference establishing standards for uniformity in the recording and reporting of public health work. Since the act requires reporting to both the U. S. Public Health Service and the U. S. Children's Bureau in order to receive the quarterly allotments from federal funds, the necessity for uniformity of recording and reporting is manifest.

At the conference called by the U. S. Children's Bureau a plan was presented for carrying into effect title V of the Economic Security Act, which has to do with maternal and child health and care of crippled children and makes available $3,800,000 for each fiscal year beginning with 1936. This is divided into a matched fund giving $20,000 to each state, the District of Columbia, Alaska and Hawaii, and dividing among these jurisdictions in proportion to the number of live births the sum of $1,800,000; as much of these two apportionments as may be used are to be matched dollar for dollar with state funds. There is also provided in this title of the act a free fund of $980,000 to be allotted according to the financial need of the individual state as determined by the Secretary of Labor, taking into consideration the number of live births. Conditions required to be included in state plans for maternity and child welfare which shall be approved by the Chief of the Children's Bureau include financial participation by the state, administration or supervision by the state health department, such reports as the Secretary of Labor may require, extension and improvement of local maternal and child health services, cooperation with

medical, nursing and welfare organizations, and development of administrative services in needy areas.

Services for crippled children are to be carried out through the Children's Bureau by means of a matched fund of $20,000 to each state, the District of Columbia, Alaska and Hawaii, and no free fund. This program differs from the rest of the programs under the act in that it is not a program of public health and disease prevention but is frankly a program for the medical care of crippled children. It may not always be administered by the state health department as the other activities under the act will be. It contains the same general requirements as outlined for the maternity and child welfare functions, including cooperation with medical, health, nursing and welfare organizations. This is the part of the program that is most directly liable to be in competition with the private practice of curative medicine. This portion of the program is being studied by the Bureau of Medical Economics with respect to its possible relationship to the Bureau's special report adopted by the House of Delegates at Atlantic City.[2]

In the plans that the Children's Bureau has drawn up for administration of the maternal and child health provisions of the act are plans for cooperation with state medical societies and with nursing, welfare and other agencies and organizations through advisory committees and cooperative and educational activities. A similar cooperative relationship with county medical societies is proposed in carrying out the local programs.

The act provides for advisory committees to the Surgeon General of the United States Public Health Service and the Chief of the United States Children's Bureau. The intention has been declared to request official representatives from the American Medical Association to serve on these committees. The State and Provincial Health Authorities of North America adopted a resolution requesting publication in medical and dental journals of a statement outlining the general purposes of public health plans under the act and assuring the medical profession that they do not contemplate competition in the private practice of curative medicine.

The conference with the Public Health Service and that with the Children's Bureau were marked by a frequently expressed desire and determination to cooperate with the medical profession in the making and carrying out of plans. It is therefore important that each state medical society shall be prepared to cooperate with the state health officer, the responsible administrative head in each state or territorial jurisdiction, in the development of plans that accord with the principles of organized medicine. Such cooperation might be through the council of the state medical society or such other body as might be designated for the purpose. Full information, including copies of the reports as amended and adopted, will be distributed to secretaries of state medical societies as soon as they can be prepared by the Bureau of Health and Public Instruction.

2. Special Report, Bureau of Medical Economics, Eighty-Sixth Annual Session, American Medical Association, Atlantic City, 1935.

SYMPATHECTOMY FOR THROMBO-ANGIITIS OBLITERANS

Thrombo-angiitis obliterans (Buerger's disease) affects predominantly young male adults. Anatomically the condition is characterized by a progressive thrombosis of the peripheral arteries and veins. The clinical picture is characteristic. In a more or less regular sequence there appear coldness of the digits, intermittent claudication, postural color changes, diminution or loss of pulsation in the peripheral arteries, localized pain during periods of rest, trophic changes in the digits leading to gangrene, and, sooner or later, involvement of the opposite extremity. The milder forms are amenable to conservative treatment consisting of rest in bed, contrast baths, postural exercises, careful application of heat, and vaccine protein therapy. In a considerable percentage of cases the condition is progressive. For these, sympathectomy merits consideration.

Herrick, Essex and Baldes [1] demonstrated in carefully controlled experiments that, following lumbar sympathectomy in a dog, the flow in the femoral artery on the sympathectomized side was about twice as great as that on the intact side. Diez [2] began to perform lumbar sympathectomies for the cure of thrombo-angiitis obliterans in 1924. Analysis of the early as well as of the late results in his series of seventy-five cases indicated that 75 per cent were definitely benefited by the operation. This work was soon followed by that of Adson and Brown,[3] who reported 100 sympathectomies. Eighty-nine of these were bilateral lumbar sympathetic ganglionectomies and trunk resections, and fifteen were bilateral cervicothoracic ganglionectomies with resection of the upper portion of the thoracic sympathetic trunk. An "average degree" of improvement occurred in 80 per cent of the cases and a useful extremity in 76 per cent. Filatov [4] collected 273 sympathectomies for thrombo-angiitis obliterans performed between 1929 and 1934. With his own thirty-four cases and Hesse's fifty-one cases collected up to 1929 the total number was brought up to 379. Filatov's analysis of these cases indicates that 80 per cent were benefited and that 20 per cent were not. The mortality amounted to 4 per cent.

The proponents of the operation believe that the failure to obtain good results in 20 per cent of the cases

1. Herrick, J. F.; Essex, H. E., and Baldes, E. J.: The Effect of Lumbar Sympathectomy on the Flow of Blood in the Femoral Artery of the Dog, Am. J. Physiol. **101**: 213 (July) 1932.

2. Diez, Julio: Rev. argent. de neurol., psiquiat. y méd. leg. **4**: 304 (July-Aug.) 1930.

3. Adson, O. W., and Brown, G. E.: Thrombo-Angiitis Obliterans, J. A. M. A. **99**: 529 (Aug. 13) 1932.

4. Filatov, A.: Die unmittelbare Beeinflussung der Spontangangrän durch die lumbale Sympathectomie und deren Dauerwirkung, Deutsche Ztschr. f. Chir. **244**: 491 (Feb.) 1935.

is to be charged to either a faulty selection of operative cases or to a faulty operative technic. The operation is not indicated for mild cases that respond to the conservative medical treatment. It is likewise contraindicated in cases of extensive thrombosis or massive gangrene. It may be used, however, in slowly progressing cases that do not respond to conservative measures. A good result from sympathectomy can be expected only when the blood vessels of the extremity are still capable of dilatation. Of the several tests, that developed by Brown and consisting of intravenous injection of typhoid vaccine gives the clearest indication as to the vasomotor response. Brown and Adson found that, whereas the mouth temperature of a normal person will increase on an average two degrees following vaccine injection, the temperature of the skin over the digits will increase from four to six. The explanation of the phenomenon, according to the authors, is that the peripheral arteries have been opened by inhibition of the vasomotor center and that more blood has been permitted to flow to the periphery. This test makes it possible to determine in patients with thrombo-angiitis obliterans the presence of vasomotor spasm of the collateral vessels and unoccluded arteries. Unless the rise in temperature of the skin over the digits is two or more times greater than the oral temperature, the condition is to be considered inoperable. It was found at the same time that administration of vaccine for the purpose of producing fever and vasodilatation was most effective in relieving symptoms and encouraging the healing of abrasions and ulcers. However, while the vaccine therapy gave only temporary improvement, the increase in the blood flow to the extremity and the temperature increase following a sympathectomy continuously increased. Filatov calls attention to other valuable criteria of the test; namely, the subjective sensations of the patient and the improvement or the return of arterial pulsation.

The technical requirements for a successful sympathectomy imply the most complete desympathetization possible. Leriche's own experience with periarterial sympathectomy demonstrated the inadequacy of partial desympathetization. Brown and Adson insist on bilateral removal of the third, fourth and fifth lumbar sympathetic ganglions and the intervening sympathetic trunks. It should be emphasized that the recognition of the sympathetic fibers and trunks is not always a simple matter. It is not unlikely that some of the failures were due to the removal of the lymphatic trunks, which closely resemble the sympathetic trunks. It must be further emphasized that the operation is not only technically difficult even for the expert neurosurgeon but likewise a formidable procedure for the patient. The most serious complication is suppuration of the wound, which is particularly frequent in cases complicated by gangrene. The mortality even in the hands of the expert is not less than 4 per cent.

Current Comment

INTEGRATION OF THE MEDICAL PROFESSION

Recently there was introduced and passed in the legislature of the state of Oklahoma a statute integrating the dental profession. In the legal profession the movement toward integration has been under way for some years. Apparently there are movements afoot both in Oregon and in South Dakota for integration of the medical profession. This term implies the organization by statute of all licensed practitioners of medicine within a state into a public corporation, which corporation is authorized by law to determine the professional fitness of those who seek admittance into the profession in that state. The corporation would also be authorized to supervise and regulate the professional activities of every member of the profession. Thus it would determine who is and who is not eligible for admission, supervise the conduct of members, and reprimand, suspend or remove them when circumstances indicate the desirability of such action. Of course a member expelled from a corporation would thereby cease to be authorized to practice medicine. In such an integrated profession, every licensed practitioner would be entitled to vote for the managers of the corporation and would also be assessed for the cost of its management. An integrated medical profession would therefore take over the activities of medical examining and licensing boards. The movement would not apparently have great popularity among physicians, who are, of course, on a different basis than either dentists or lawyers, because of the cultists of various types who enter into the practice of medicine and because of the strength and usefulness of voluntary medical organizations. Certainly until the situation has been much more extensively studied and all the possibilities worked out, the medical profession will do well to avoid being drawn into any such movement.

A CHAIN LETTER HITS THE DOCTORS

Among the peculiar phenomena of the chain letter craze is one that has just come to the attention of the headquarters office of the American Medical Association. It is planned apparently to take advantage of the interest of physicians in organized medicine. The chain letter, which is headed with the name of the Association, suggests that the physician who receives it send $10 in cash or in check to the doctor whose name appears on the top of the list and that he leave the name of that person off and add his own name at the bottom of the list. The list includes presumably ten names of men who are physicians or who are interested in organized medicine, many of them officers of county and state medical societies. An analysis of the list reveals in the center the names of two men who are not physicians and who will thus eventually receive considerable sums of money from the medical profession. It is assumed that few doctors will have minds so unscientific as to participate in a chain letter orgy!

PROCEEDINGS OF THE ATLANTIC CITY SESSION

MINUTES OF THE EIGHTY-SIXTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT ATLANTIC CITY, JUNE 10-14, 1935

(Continued from page 2271)

Second Meeting—Tuesday Morning, June 11

The House of Delegates was called to order at 9:30 a. m. by the Vice Speaker, Dr. Nathan B. Van Etten.

Report of the Reference Committee on Credentials

Dr. J. D. Brook, Chairman, reported that Dr. E. A. Meyerding, Minnesota, who was alternate delegate for Dr. J. T. Christison, wished to be seated as alternate delegate for Dr. H. M. Johnson, who was not present and whose alternate could not serve. He moved that Dr. Meyerding be so seated. The motion was seconded by Dr. Isaac A. Abt, Section on Pediatrics, and carried.

Dr. Brook stated that there was a total registration of 162.

Roll Call

It was moved by Dr. C. S. Gorsline, Michigan, seconded by Dr. Olin H. Weaver, Georgia, and carried, that the signed attendance slips constitute the roll call of the House.

Presentation of Minutes

On motion of Dr. J. Allen Jackson, Pennsylvania, seconded by Dr. William H. Seemann, Louisiana, and carried, the House dispensed with the reading of the minutes.

Report of the Reference Committee on Sections and Section Work

Dr. T. B. Throckmorton [illegible] ented the following report:

The report of the Council on Scientific Assembly is clear, concise and to the point. It is a pleasure that your committee approves, in the highest commendable manner, the efforts of the Council in arranging the joint program in which the two greatest organizations in medicine on the American continent will participate; namely, the American Medical Association and the Canadian Medical Association. Such a program will redound to the glory of scientific medicine as it is known and practiced among the professions of these two nations, and it will do much to reflect to the world at large the good will, the professional feeling and the kindred interests that have ever existed between these two great medical associations.

Your committee likewise commends the Council on Scientific Assembly for the arrangements that it has caused to be made for the carrying on of the meetings of the various sections of the Scientific Assembly. That much time and effort have been spent in the preparation for proper meeting places goes without saying; but it should be borne in mind that the Council assumes the very great responsibility not only in supervising the work of the sections but also in seeing that suitable meeting places are provided for those who are in attendance on these meetings. For these efforts your committee wishes to commend the members of the Council on Scientific Assembly in the highest possible manner.

Evidently the program initiated last year of holding General Scientific Meetings on Monday and Tuesday of the week of the annual session of the Association met with favorable response, for your committee notes that arrangements have been made by the Council to carry on the work so nobly begun. This too meets with the approval of your committee, for it believes that such meetings are a distinct step forward in the progress of scientific medicine.

The Council is to be further commended for the arrangements it has made for those persons who are interested in the study of anesthesia, of the history of medicine, and of military medicine. These subjects, while of importance, evidently are not considered by the Council to be of such scope as to justify the establishment of a distinct and separate section for each of them; yet, classified under the Section on Miscellaneous Topics, these subjects can be brought to the attention of the profession in such a supervised and well directed manner as to assure the presentation of a well rounded program on topics that well merit a place on the program of the Scientific Assembly.

For all the manifold duties that the Council on Scientific Assembly has so ably performed during the past year, your committee wishes to express its heartiest thanks, believing that in so doing it but reflects the sentiment of the House of Delegates.

Respectfully submitted.

T. B. THROCKMORTON, Chairman.
JOHN W. AMESSE.
ISAAC A. ABT.
G. HENRY MUNDT.
HOLMAN TAYLOR.

On motion of Dr. Throckmorton, seconded by Dr. H. B. Everett, Tennessee, and carried, the report was adopted.

Report of Reference Committee on Medical Education

Dr. Irvin Abell, Chairman, presented the following report:

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

1. The Council is to be commended for its thorough survey of the existing schools of occupational therapy. Its proposed Essentials of an Acceptable School of Occupational Therapy as outlined in Supplement A, pages 123, 124, 125 and 126 of the Handbook is recommended for adoption.

2. The activity of the Council with reference to the staffs of hospitals approved for intern training comprising only members in good standing in their local county societies is noted and its completed report at the next annual session will be awaited with interest.

3. Your reference committee records with approbation the progress of the Council in developing comprehensive plans for the identification of qualified physicians specializing in the various fields of medicine.

4. Your reference committee would urge the Council to speed its efforts to meet the urgent need for postgraduate work and would suggest that this could well be done by carrying the instruction directly to the practitioners in their various fields.

5. Your reference committee recognizes the present unsatisfactory methods of compensating radiologists for their service in hospitals and recommends that for the remainder of the sentence, line 6, page 120, of the Handbook, "but that in no case should there accrue to the hospital a substantial profit over and above the reasonable cost of maintaining the department nor should the patient be exploited through excessive fees" the following be substituted: "but that in no case shall an economic arrangement be operative which is designed to provide a direct profit to the institution from private patients."

6. In view of the growing tendency to delegate purely medical functions to lay individuals, your reference committee would exhort the Council to continue its interest to the end that a definite position on the subject can be stated.

7. Your committee would urge the Council to continue its efforts to restrict the entrance of optometrists into any phase of medical practice.

8 and 9. Your reference committee visualizes the value of the complete report of the Council based on the resurvey of medical schools promised for next year and regards this work as equal in importance to any undertaken by it. The restriction of poorly prepared matriculants provides a genuine service to the student body as well as to the public.

10, 11 and 12. The Council reports commendable activity in the survey of hospitals, of sanatoriums caring for patients with tuberculosis and of schools for the training of physical therapy and laboratory technicians. Your reference committee would direct attention to the net gain in the number of approved hospitals for interns and residents as being of great import to the cause of medical training and service.

13, 14 and 15. Your reference committee desires to direct the special attention of the members of the House of Delegates to the importance of the factual data assembled in the Hospital Number of THE JOURNAL, issued March 30, 1935. These are of value not only to the profession but also to the lay people of every state involved, revealing, as they do, conditions that have a direct bearing on the cost of medical care.

RESOLUTION MAKING MEMBERSHIP A PREREQUISITE FOR QUALIFICATION AS SPECIALIST ON LIST OF COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

The resolution adopted by the Arkansas Medical Society, April 17, 1935, presented by Dr. Brooksher, would require pathologists and radiologists to become members of their respective county and state medical societies as a prerequisite for qualification as a specialist on the Council's list. Your reference committee recommends the approval of the resolution in principle, with the application of the requirement to all graduates of and after 1930.

RESOLUTION ON TRAINING OF INTERNS

The resolution introduced by the Council on Medical Education and Hospitals, June 10, 1935, urging officers and members of state and county societies to give due consideration to the problems of intern training in the approved hospitals with which they may be connected, is recommended for adoption.

RESOLUTION ON ESTABLISHMENT OF COURSES IN MEDICAL ECONOMICS IN ALL MEDICAL COLLEGES IN THIS COUNTRY

The resolution of the board of trustees of the Medical Society of the State of Pennsylvania, June 10, 1935, introduced by Dr. Walter F. Donaldson, urging the Council on Medical Education and Hospitals and the Bureau of Medical Economics to continue their endeavors until courses in medical economics have been established in all the medical colleges in the country, is recommended for adoption, with the suggestion that the Council in collaboration with the Bureau of Medical Economics outline the principles to be covered in such a course.

Respectfully submitted.

IRVIN ABELL, Chairman.
WALTER F. DONALDSON.
GEORGE BLUMER.
W. H. SEEMANN.

On motions of Dr. Abell, duly seconded and carried, the report was adopted by sections and as a whole.

Report of the Reference Committee on Hygiene and Public Health

Dr. J. N. Baker, Chairman, presented the following report:

Dr. Holman Taylor, Texas, presented a resolution referring to broadcasting, which had been adopted by the State Medical Association of Texas.

The Reference Committee on Hygiene and Public Health gave that resolution careful consideration, both as to its content and as to its implications, and recommends that the House of Delegates of the American Medical Association substitute therefor the following resolutions:

WHEREAS, The American Medical Association stands for, and is willing to approve, only the highest standards of broadcasting; and

WHEREAS, The American Medical Association, acting through its House of Delegates, has previously affirmed its opposition to any station or program broadcasting material which is or might be detrimental to the health of the public; therefore be it

Resolved, That it is the sense of the House of Delegates of the American Medical Association that the broadcasting of matter coming from an adjoining country, which is untrue or dangerous, or both, as it pertains to the public health, be brought to the attention of the Federal Communications Commission; and be it further

Resolved, That this commission be requested to take up through proper official channels any practices in radio broadcasting now existing, or which may hereafter exist, in an adjoining country in conflict with the foregoing declared principles, with the view of having such practices corrected.

Respectfully submitted.

J. N. BAKER, Chairman.
W. F. BOWEN.
J. D. HAMER.
V. E. SIMPSON.
O. S. WIGHTMAN.

Dr. Baker moved that the report of the reference committee be adopted. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried, after discussion by Dr. Olin West, Secretary, and by Dr. Holman Taylor, Texas, who endorsed the substitute resolutions.

Report of the Reference Committee on Legislation and Public Relations

Dr. Charles E. Mongan, Chairman, presented the following report:

A resolution referring to radio broadcasting was submitted by Dr. James F. Rooney, New York, at the request of the Medical Society of the State of New York, and was referred to your Reference Committee on Legislation and Public Relations.

Your committee is informed that the Director of the Bureau of Investigation and the Director of the Bureau of Health and Public Instruction of the American Medical Association appeared recently before the Federal Communications Commission, submitted evidence of the evils of the present poorly regulated broadcasting system so far as the health of the public is concerned and presented their views with respect to the improvement of the situation. There is every reason to believe that the commission will do whatever may be possible under existing law to improve conditions. Your committee recommends, however, that this matter be referred to the Board of Trustees, with a view to promoting the enactment of such federal legislation and, if necessary, the adoption of such international conventions as may be necessary to cure the existing evil.

Respectfully submitted.

CHARLES E. MONGAN, Chairman.
E. G. WOOD.
EDWARD M. PALLETTE.
JOHN Z. BROWN SR.
S. P. MENGEL.

On motion of Dr. Mongan, seconded by Dr. George W. Kosmak, New York, and carried, the report of the reference committee was adopted.

Report of the Reference Committee on Miscellaneous Business

Dr. John F. Hagerty, Chairman, presented the following report:

The Reference Committee on Miscellaneous Business, appreciating the importance of the catgut problem in surgical work, and the necessity for thorough study of all the problems connected with its use, viz., mechanical, bacteriologic and allergic reactions of tissues, approves the resolution introduced by the Medical Society of the State of New York and recommends the appointment of a committee, under the supervision of the Council on Pharmacy and Chemistry, to investigate and formulate standards governing the manufacture of catgut for surgical use.

Respectfully submitted.

JOHN F. HAGERTY, Chairman.
D. F. CAMERON.
L. J. KOSMINSKY.

It was moved by Dr. Hagerty that the report be adopted, and Dr. George W. Kosmak, New York, seconded the motion. The Secretary suggested that the report be amended so as to

approve the appointment of the committee that is already in existence. Dr. Hagerty and Dr. Kosmak approved of the suggested amendment, and the report was then adopted as amended.

Resolution on Opposition to Continuation of Dick Scarlet Fever Patent

Dr. J. M. Birnie, Massachusetts, introduced the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Resolved, That the Massachusetts Medical Society is opposed to the continuation of the so-called Dick scarlet fever patent and the control of this patent by the Scarlet Fever Commission, and, further, that the delegates to the American Medical Association be instructed to bring this resolution before the House of Delegates.

Resolution on Tests for Licensing All Drivers of Motor Vehicles

Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The medical profession has an interest in public safety and in the preservation of life and the prevention of injury; and

WHEREAS, The motor vehicle has been responsible for an ever increasing loss of life and limb; and

WHEREAS, The damage to humanity may be curtailed by careful physical examination of motor vehicle drivers, including stringent tests of sight and hearing, as well as other physical and mental qualifications; therefore be it

Resolved, That the Section on Laryngology, Otology and Rhinology requests the House of Delegates to appoint a special committee to study such legislation as may be required to regulate and prescribe appropriate tests for licensing all drivers of motor vehicles and to recommend such uniform legislation in the several states.

Resolutions on Opposition to the Copeland Pure Food Bill and to Advertising of Drugs and Drug Products by Pharmaceutical Houses to the Laity

Dr. John F. Hagerty, New Jersey, introduced the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

The delegates of the Medical Society of New Jersey have been requested to present to the House of Delegates of the American Medical Association the following resolutions, which were adopted by the board of trustees of that society, June 10, 1935:

Resolved, That the House of Delegates of the American Medical Association be requested to express its opposition to the passage of Senate Bill No. 5 (Copeland Pure Food Bill) and urge a Congressional investigation of the enforcement of the present Wiley Pure Food and Drugs Act; and be it further

Resolved, That the Medical Society of New Jersey is opposed to the advertising of drugs and drug products by pharmaceutical houses to the laity, and requests the American Medical Association to refuse advertisements for any medical journal controlled by the American Medical Association or by its constituent state associations of pharmaceutical houses which resort to this practice.

The House recessed at 10:15 a. m. and reconvened at 10:45 a. m.

The Speaker, Dr. F. C. Warnshuis, took the chair.

Report of Board of Trustees

Dr. J. H. J. Upham, Chairman, stated that the Board of Trustees desired to bring the following three subjects to the attention of the House:

1. INTEGRATION OF MEDICAL PROFESSION

The Board of Trustees has been advised that at least two states have had under consideration, and that one still has under consideration, the matter of the reorganization of the medical profession along lines similar to those that are being followed in a number of states for the reorganization of the legal profession, namely, by a process of what is known as "integration." Under this process the entire profession of the state is organized by law, or in the case of the legal profession, in some instances, under direction of the courts, into a public corporation or its equivalent. Every licensed practitioner in the state is by reason of his status as a licensed practitioner a member of the corporation and entitled to a vote in its management. He pays such dues as the corporation imposes on him. The corporation, through its proper officers, passes on the qualifications of every person seeking a license to practice in the state, supervises their professional activities while they are licensed, and disciplines them as circumstances require in case of misconduct. Expulsion from the corporation and revocation of license are synonymous, for no one can practice who is not a member of the corporation.

It will be seen that under this system the profession is organized into a guild, as it were, and controls its own affairs, except that it has no right to pick and choose its members if they are morally and professionally qualified. It combines the functions of a medical licensing and examining board and of a state professional society. As has been pointed out, this kind of organization is being rather extensively followed by the legal profession. It has already been adopted by law in Oklahoma for the dental profession. It has been considered in one state and has been and still is being considered in another. It seems probable that other state associations will in due time give consideration to the form of organization described. For this reason, and in view of the revolutionary character of the change described, the Board of Trustees has deemed it best to submit it to the House of Delegates for determination of the policy of the Association with respect to it.

2. IMMIGRANT PHYSICIANS

At the recent Chicago special session the House of Delegates adopted a resolution directing that efforts be made to procure such legislative action as might be necessary to stop entirely the "selective injustice to the American physician" resulting from the immigration into the United States of foreign physicians. This resolution was preceded by a preamble reciting that the immigrant physician was exempted from the limitations imposed by law on the immigration of foreigners into the United States, under the 1917 immigration law. The Board of Trustees has been advised that the immigration law of 1917 does not impose quotas on the several nations of the world with respect to the immigration of their nationals into the United States but limits the immigration of persons from foreign countries into the United States under prearranged contracts of employment. Physicians are exempted from the provisions of that act and may enter notwithstanding the fact that they come in under prearranged contracts. How many have done and are doing so, however, it has been impossible to ascertain. The quotas allotted to the several nations of the world for immigration into the United States were allotted by the immigration act of 1924, and under this act physicians are given no preference over other immigrants.

A study of the records of the Bureau of Immigration shows that the proportion of immigrant physicians entering the United States annually from and including 1931 to the number of physicians entering the medical profession by examination each year is lower than at any time since 1919, and the percentages in 1932 and 1933 were the lowest at any time since 1904, when records of this character first became available.

The Board has been advised that it seems practicable to exclude immigrant physicians, not by depriving them of any privileges now granted them by reason of their status as physicians, but by making them a selected group against which restrictive legislation would have to be directed. Such legislation would take the form either of depriving them of their right to enter the United States under contracts of employment prearranged or of imposing on them limitations not imposed on other quota immigrants. How far the number of immigrant physicians would be reduced by depriving them of their privilege of coming in under prearranged contracts of employment is uncertain, because no figures are available to show the number entering in that way. Whether the Association desires to sponsor legislation undertaking to exclude physicians as a class even under the quota privileges to which they would otherwise be entitled is a matter involving such serious public policy that it has seemed proper to submit the matter to the House of Delegates for further consideration before entering on that course.

3. COMMERCIAL USE OF THE WORD "DOCTOR"

The attention of the Board of Trustees has been called to the commercial use of the word "Doctor" in connection with advertising, notably in connection with the advertising of shoes, in cases in which no doctor has had anything to do with the origination of the article advertised or with approving it from the

medical standpoint. It has been urged that the Association take steps to prevent the misuse of the word in that manner.

Obviously, the prevention of the misuse of the word "Doctor" must depend to a large extent on state legislation, since federal legislation can apply only to interstate and foreign commerce. Even with respect to state legislation, difficulty arises because of the present misuse of the word "Doctor" in other than commercial ways. Without considering such formerly honored titles as Doctor of Philosophy and Doctor of Laws, we now have Doctors of Osteopathy, of Chiropractic, of Naturopathy, of Podiatry, of Chiropody, and of other similar titles in which the doctor is to be debased. Legislation should begin, therefore, not in an effort to prevent the commercial misuse of the word "Doctor" but in an effort to procure the enactment of legislation that will regulate the conferring of the degree of Doctor and prevent its misuse for any purpose whatever. Along with this will go legislation to prevent fraudulent advertising of all kinds, whether by the misuse of the title "Doctor" or otherwise. The matter is respectfully submitted to the House with the recommendation that it approve legislation such as is suggested here and commended for the favorable consideration of the several state associations.

The Speaker referred the first section of the report to the Reference Committee on Reports of Board of Trustees and Secretary. The second and third sections of the report were referred by the Speaker to the Reference Committee on Legislation and Public Relations.

Report of the Reference Committee on Reports of Officers

Dr. Arthur J. Bedell, Chairman, presented the following report:

ADDRESS OF SPEAKER

Your committee hopes, in opening this report, that it may be deemed within its prerogative to offer the sympathies of this House to the Speaker in the great bereavement which he has just suffered, and that his anguish may be somewhat appeased when he is reminded of the high regard in which all those who serve our Association in an official capacity are held.

Your committee notes with pleasure the details included in the Speaker's address and recommends that every member of the House of Delegates be enjoined, on returning to his constituency, to make a prompt, accurate and comprehensive report of the activities of this House of Delegates, since it is apparent that there is urgent need for bringing to every member and Fellow a clear and intimate knowledge of the policies and activities of the Association. Misunderstandings will be mitigated when the Fellows are intelligently informed.

ADDRESS OF PRESIDENT

Your committee has considered, with a deep interest, the splendid address of President Bierring. We wish to commend him for the breadth of view expressed and the scholarly grasp of the Association's activities which he has displayed throughout the nation. One of the gratifying impressions gained in his contacts with the members of our Association was their sustained interest and manifest devotion to scientific medicine.

Your committee reviewed the pronouncements made by him in relation to the activities of the various standing and special committees and concurs in his expression of appreciation of the fruitful services rendered by the General Secretary, the chairman and the members of standing and special committees. It particularly approves of his restatement that the development of adequate medical care is necessarily closely and intimately associated with the ethical conduct of all physicians. Such conduct has always been governed by precept and example, and to keep the professional shield untarnished is one of our sacred obligations.

Your committee heartily approves of the President's commendation of the work of the Council on Medical Education and Hospitals, especially as it applies to the inspection and reclassification of medical schools.

Your committee commends and approves his statement relative to Federal Emergency Relief. The organized medical profession is sympathetic with the humanitarian purpose of this movement but looks with disfavor on the administration of its medical provisions by lay direction or its extension beyond the present emergency period.

With regard to the program contemplated by the national government in the extension of public health activities, your committee feels that the responsibility for carrying out a public health program is the duty of organized medicine, which is the only group qualified by training and experience to administer such a service so as to safeguard fully the public interest. Your committee is constrained to believe that it is not possible to maintain a high quality of medical service unless there are provisions for complete medical control of those who are to deliver the service.

Your committee wishes to place on record its approval of the devotion which Dr. Bierring has displayed during his strenuous year of administration and to thank him for the sustained interest which he has shown in the welfare of the medical profession of this great country.

ADDRESS OF PRESIDENT-ELECT

Your committee senses the fine discretion implied in the President-Elect's address in that he confines his remarks largely to commendatory statements with respect to the recent activities of the Association. Your committee notes, however, with pleasure that he points to a potential danger which lies in the continued growth of the Association in the direction of a separate entity, tending to remove its activities and purposes from that close relation with constitutent societies necessary to healthy growth. He correctly suggests that the officers and Trustees are doing and should continue to do everything possible to forestall such a development and urges the individual members of this House to resist the further development of this harmful trend by acquainting the membership in their various communities with the nearness of the parent organization, and its earnest desire to help them in the solution of their daily problems.

REPORT OF JUDICIAL COUNCIL

Your committee notes that as a result of the discussions and pronouncements of the Judicial Council there has been a steady improvement in the methods by which medical service is made available to the public. It regrets, however, that much remains to be accomplished, and it believes that the time has arrived when we should insist on the strict enforcement of the Principles of Medical Ethics by all constituent societies for, as so well stated by the Council, the Principles of Medical Ethics is accepted as a guide in professional relations and intelligently and faithfully followed by a large majority of the profession. There are, however, some isolated instances in which this is not true. The delinquents comprise individuals, certain groups and a few institutions. Solicitation of patients, particularly in industrial practice, unfair competition by clinics and groups, and unethical and unlawful practice of medicine by hospitals, dispensaries, insurances and universities furnish outstanding examples.

The Council further states, "Public confidence in our avowed declarations for medical control over things medical cannot be successfully cultivated or maintained unless we exclude or remove from the ranks of our organized profession those who ignore our ethical code, especially as it applies to the true professional spirit in our relations with each and every patient." It will be recalled, the Council continues, that "last year the House of Delegates amended its Principles of Medical Ethics so clearly that there can be no misunderstanding of the conditions mentioned but the present method of procedure of prefering charges makes the pronouncement ineffective." Your committee, therefore, deems it advisable to extend the origination of charges, in certain situations manifestly too great for county societies to handle, to the state association and possibly in rare instances to the national organization. Your committee agrees with the Judicial Council that, when the House of Delegates sees fit to extend such jurisdiction in matters of discipline, the Council should have the duties and powers then enjoined on it but should not at any time be expected to function in an ex parte capacity.

The Judicial Council again reminds us that medical ethics follow every member of the American Medical Association, whether in hospitals, in universities, in clinics or in private prac-

tice. While the member is at all times subject to the ethics of the profession, the hospital, university or clinic, as an entity, is not. Through the Council on Medical Education and Hospitals, in cooperation with the Judicial Council, sufficient oversight, persuasion and, if needed, pressure can be brought to accomplish that which the physicians in such institutions, as individuals, cannot. With such concerted action between the two Councils and with such enforcing legislation as has been suggested, many harmful and obnoxious practices would cease and others, not now presenting any large problem, would be prevented.

Your committee, therefore, recommends that the Council on Medical Education and Hospitals, together with the Judicial Council, formulate a plan whereby all those associated in the delivery of medical service be included in the investigation of hospitals for classification and that approval be based in the future on the ethical practices of the institution as well as on its scientific work.

Your committee further recommends that, in order to remove the menace which the Judicial Council reveals with respect to overlapping membership in state associations, the Constitution and By-Laws be so amended as to remove any further difficulty in assigning a member to the state in which he practices.

Finally, your committee records its disapproval of any plan of organization of the profession in the United States that permits a member to hold affiliation with the Association in more than one state.

In order to effectuate the suggestions contained in this report, your committee requests the Judicial Council to submit amendments to the Constitution and By-Laws of the Association as are necessary to secure the purposes sought.

Respectfully submitted.

ARTHUR J. BEDELL, Chairman.
J. GURNEY TAYLOR.
BEN R. MCCLELLAN.
JOHN W. BURNS.
C. W. ROBERTS.

On request of the Vice Speaker, the House by a rising vote extended sympathy to the Speaker, Dr. F. C. Warnshuis, because of the death of his son.

On motions, duly seconded and carried, the report of the Reference Committee on Reports of Officers was adopted section by section and as a whole.

The Speaker referred to the Reference Committee on Amendments to the Constitution and By-Laws the section of the report requesting an amendment to the Constitution and By-Laws, and referred to the Judicial Council the last recommendation in the report of the Reference Committee on Reports of Officers.

Resolution on Organization of a Committee on Medicolegal Blood Grouping Tests

Dr. J. Richard Kevin, New York, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Resolved, That a committee, to be known as the Committee on Medicolegal Blood Grouping Tests, be organized for the purpose of acquainting the suitable authorities in the legal profession with the existence and reliability of the blood grouping tests, so that statutes may be enacted authorizing courts to order individuals to submit to blood grouping tests when they are required in those jurisdictions in which blood tests are not obligatory at present.

Resolution Requesting the Proper Authorities in the War Department to Distribute Hygeia in the CCC Camps

Dr. Ralph A. Fenton, Oregon, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The Civilian Conservation Corps, in its various camps throughout this country, is supplied with books and periodical literature by the War Department; and

WHEREAS, Such literature should promote the dissemination of approved health information; be it

Resolved, That the Director of the Civilian Conservation Corps, and the Surgeon General and other competent authority in the War Department be requested by this House of Delegates to contract for the supply of the magazine HYGEIA to each CCC Camp, excluding any other so-called health magazine published by private interests for profit.

The House recessed at 11:15 a. m. and was called to order by the Speaker at 11:40 a. m.

Report of the Judicial Council

Dr. George Edward Follansbee, Chairman, presented the following report of the Judicial Council acting as a reference committee:

A resolution was reported to the Judicial Council as a reference committee without action by the House. It reads as follows:

"Under the standing rules of the House of Delegates, page 53 of the Constitution and By-Laws, a section entitled Solicitation of Votes, adopted by the House of Delegates at Saratoga Springs, N. Y., June 13, 1902, reads as follows: *Resolved*, That it is the sense of the House of Delegates of the American Medical Association that the solicitation of votes for office is not in keeping with the dignity of the medical profession nor in harmony with the spirit of this Association, and that such solicitation shall be considered a disqualification for election to any office in the gift of the Association."

The reference of this resolution to the Judicial Council without action of approval by the House places the Council either in the position of acting only as a reference committee reporting back to the House approval or disapproval of the resolution, or in the position of assuming that the action of the House would approve the request for opinion asked in the resolution and submitting it forthwith.

The Judicial Council cannot presume to anticipate what the action of the House of Delegates may be on any subject; therefore, acting only as a reference committee, it recommends the adoption of the resolution as written.

However, if the House approves the recommendation of the Judicial Council as a reference committee and adopts its report, the subject matter of the resolution is very important and the occasion for offering the resolution appears to be urgent. Therefore, the Judicial Council is prepared to offer its opinion as requested in the resolution at the pleasure of the House.

Respectfully submitted.

GEORGE EDWARD FOLLANSBEE, Chairman.

Dr. Follansbee moved that the report of the Judicial Council as a reference committee be adopted. The motion was seconded by Dr. Arthur J. Bedell, New York, and carried, after discussion by Dr. Isaac A. Abt, Section on Pediatrics.

Dr. Follansbee then presented the report of the Judicial Council on the resolution concerning solicitation of votes:

This resolution asks the decision of the Judicial Council on a standing rule adopted by the House of Delegates in 1902, in respect to solicitation of votes, in which it is declared "that it is the sense of the House of Delegates of the American Medical Association that the solicitation of votes for office is not in keeping with the dignity of the medical profession nor in harmony with the spirit of this Association, and that such solicitation shall be considered a disqualification for election to any office in the gift of the Association." Two questions are asked (1) "whether said section of the Standing Rules is still in force" and (2) "whether any person who is elected or nominated in violation of said rules is legally eligible for nomination or election to an office in the American Medical Association."

To the first question the answer is that this Standing Rule, adopted in 1902, has never been repealed and is in the same force and effect as it has been since its adoption.

In answering the second question, a number of factors must be considered. In amending the Constitution by addition or change, a period of one year must elapse between proposal and adoption. Amendments to the By-Laws must be held over for one day. Both require a two-thirds vote. A Standing Rule requires no delay and only a majority vote. The obvious difference in importance in the three sections of laws governing our organization is indicated by the size of majority required for adoption and the variation between them in the amount of time required to provide thoughtful consideration of the subject matter.

There are qualifications for general officers incorporated in the By-Laws, chapter IV, section 2, in which it is stated "The General Officers must have been members of the Association and Fellows of the Scientific Assembly for at least two years next preceding their election." The Standing Rule under consideration imposes another qualification; viz., that "Solicitation shall be considered a disqualification." It would be at least

strange legislation to divide the qualifications for general officers between two such widely diverse sections of our law as the By-Laws and the Standing Rules of the House of Delegates. It is apparent to the Council that the Standing Rule in question was adopted at a time and under the spur of a provocative occasion when emotion superseded reason and when hasty and incomplete legislation was more soothing to the House than effective in carrying out its purpose. That the rule is loosely drawn is evident in the absence of definition of the offense, solicitation constituting disqualification. It simply says "solicitation shall be considered a disqualification." Solicitation by whom, the candidate or by his friends? How, by word of mouth, by letter to personal friends, by general circularization, by a friend of the candidate asking the support of his friend, or by trading of votes between groups? There is solicitation and solicitation: some dignified, fair and entirely proper, some reprehensible and beneath the dignity of this national organization of highly educated cultured professional men whose Principles of Medical Ethics is higher than that of any other profession unless it be the ministry. It is a shame on our organization that there is ever an apparent need for such legislation.

The Council is further of the opinion that in practice the rule is unenforceable. It has, however, been a strong and, at times, an effective moral influence. It has been among our laws for thirty-three years and has never been called on to function, although it is well known, at least to the older members of the House, that violations have not been rare. Disqualification under this rule might be punishment for an offense committed not by the candidate but by overenthusiastic friends and even against his wishes and order. It is common law that no one can be punished for an act of which he had no knowledge or to which he was not a party. It is further common law that no one should be punished without an opportunity to defend himself in a fair trial. The element of time would make this procedure impossible in practice.

For the reasons detailed, the Judicial Council considers the Standing Rule on "Solicitation of Votes" to be illegal and of no force and effect. This being so, there can be no violation. There being no violation, the supposed person mentioned in the resolution is legally eligible for nomination or election. The Judicial Council believes that, if the House desires to have our laws disqualify for nomination on a basis of reprehensible solicitation, adequate legislation and phraseology can be found.

Respectfully submitted.

GEORGE EDWARD FOLLANSBEE, Chairman.

It was moved by Dr. Isaac A. Abt, Section on Pediatrics, that the report of the Judicial Council on the resolution on solicitation of votes be adopted. The motion was seconded by Dr. H. B. Everett, Tennessee, and carried, after discussion by Dr. William D. Chapman, Illinois.

Resolutions Protesting Federal Economics Harmful to Our National Defense

Dr. Arthur J. Bedell, New York, read the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, It was thoroughly demonstrated during the World War that this country paid highly in blood and money because there was no adequate mechanism for speedy mobilization and training defensive forces of the nation; and

WHEREAS, The Medical Department of the United States Army was in no noteworthily better condition than other departments, despite the fact that it must always be mobilized before combat and before other arms are mobilized; and

WHEREAS, Under authority of the National Defense Act since the World War the Medical Department of the Army has been maintaining Reserve Officer Training Corps Units in medical schools which supplied about one half of the new medical reserve personnel and gave valuable training preparatory to any national emergency but which have now been discontinued by act of Congress ostensibly as an economy measure, leaving the War Department greatly embarrassed in the procurement of new medical officer personnel, which embarrassment will increase to serious proportions after a very few years; therefore be it

Resolved, That the Medical Society of the State of New York protest federal economics harmful to our national defense; and be it further

Resolved, That the Medical Reserve Officers' Training Corps Unit should be reestablished as soon as possible; and be it further

Resolved, That a copy of these resolutions be forwarded to the War Department, the Surgeon General of the United States Army, the federal Congressmen from the state of New York and the American Medical Association.

Remarks by Dr. C. E. Mongan

Dr. C. E. Mongan, Massachusetts, addressed the House as follows:

I think I might be derelict in my duty not only to my local county society but to this great body and its executive officers if I didn't tell you a very pleasant incident that happened during our campaign in Massachusetts with regard to furnishing adequate medical care to the citizens.

I requested the director of the economic division of this organization to send to Massachusetts all the literature relating to social insurance and medical economics. I asked for 300 sets. Inside of one week this organization placed at our headquarters 300 sets on social insurance. Those pamphlets—I think there are ten in all—you are all familiar with. I think such cooperation and such efficiency should not go unnoticed by our organization. I have no resolution to offer. I simply want to call your attention to the efficiency and the cooperation of your parent organization. More than that, it had a wonderful effect on every man who received one of those packages. One man came to me and said, "I have criticized the American Medical Association for not doing this. I wish to withdraw it."

I know that the American Medical Association executives are perfectly willing to do that for every man here. I hope that you will take advantage of this cooperation. It has a psychological effect that is inestimable on the rank and file of your organization.

Address of Dr. George H. Simmons

The Speaker introduced Dr. George H. Simmons, who addressed the House as follows:

Mr. Speaker and Gentlemen, Members of the House of Delegates: I came here not to talk but to listen. I must say that I thank you very much for your reception of me. I wish I realized that I deserve it. I couldn't help thinking of the interim between the time I was active in the deliberations of this body and now. That was thirty-five years ago, the first time the Association ever met at Atlantic City. We had so many receptions, we were so well taken care of, that we came back in two years and again in two more years. It looked as though we were going to make a biennial visit.

Those occasions are remembered by me very well because of two incidents or conditions. One was that the year before in February I had been elected Editor and Manager of THE JOURNAL and that at the previous meeting they made me Secretary, so I came to Atlantic City at the first meeting here with a good deal of trepidation and doubt as to what I was going to do and how I was going to do it. I know I worried a good deal, but everything went off all right, as it always does, and your worry is temporary anyway.

The other incident was the fact that at that meeting a resolution was adopted creating a committee on reorganization. As the result of the appointment of that committee, the House of Delegates was created at the next meeting.

It has been a delight to go from then to now and see what the Association is doing, continually spreading out its good work. Could that have happened if that reorganization had not made this American Medical Association an organization representing the profession of the whole country and by the creation of this House of Delegates? I don't know.

It is well to look back over these things of the past, and it is a pleasure to see how the Association has gone through the depression. I want to congratulate the Board of Trustees and the officers of the Association in having weathered the storm and having made the best financial report ever made in the history of the Association.

Introduction and Addresses of Officers of Canadian Medical Association

The representatives of the Canadian Medical Association were escorted to the rostrum by the sergeant-at-arms.

The Speaker presented Dr. J. C. Meakins, president of the Canadian Medical Association, who addressed the House:

Mr. Speaker, Members of the House of Delegates of the American Medical Association: It is hardly a year since we received in Calgary at our own annual meeting an invitation from you to hold a combined meeting in Atlantic City this week. I cannot tell you with what pride and honor and pleasure that

invitation was received with whole-hearted enthusiasm by our association.

Just the other day I think I was telling your President-Elect, Dr. McLester, how in going over the ancient records of the early medical societies of Canada I found in a musty, yellow, old minute book certain resolutions and extracts from correspondence which had taken place between the Medical Society of Upper Canada and the Medical Society of Lower Canada, and the embryonic organization of the American Medical Association. That, I believe, if my memory serves me correctly, was in 1848. I think it might have been two years before your association was sufficiently founded. In the extracts of those minutes there was proposed and being explored the possibility of forming an American Medical Association which would include not only the state associations, I presume they were then, but the provincial associations of Canada. For certain reasons this could not be brought about, and the proposed combined meeting was to take place in 1848 and was postponed for eighty-seven years.

Now today on behalf of myself and our association, we have great pride and we appreciate the honor that you do us in permitting us to appear before you on the rostrum of your House of Delegates, and I bring from our council a resolution, which unanimously passed yesterday by standing vote, to invite you to be our guests in a combined meeting to be held in Canada in the near future. The resolution says before 1940. We would like to leave the date open so there would be no anno Domini interfering in any way with your accepting our invitation.

I take great pleasure in laying this invitation before you today. I thank you.

The Speaker then presented the chairman of the Council of the Canadian Medical Association, Dr. George S. Young, who addressed the House as follows:

Mr. Speaker, Members of the House of Delegates: I take it that in front of me is the workshop of the American Medical Association and that you are the workmen, and that for the time being you have stepped down from the heights of scientific activity and are doing the drudgery work for the American Medical Association.

As a member of a similar organization which has a workshop on a smaller scale, I can keenly appreciate your difficulties and the magnitude of your work and I want to express my very keen appreciation of the invitation that was extended to me to come here today and to see you in your workshop. I am delighted indeed that that opportunity has been afforded me, and once more I want to express my appreciation for the invitation.

The Speaker presented the past president of the Canadian Medical Association, Dr. J. S. McEachern, who addressed the House as follows:

Mr. Speaker and Members of the House of Delegates: It seems rather an anomaly that immediately after I considered myself defunct I should be resurrected and exhibited as past president. I will not delay you except to extend to you our hearty good wishes for a successful meeting and to thank you for your great kindness in honoring me with an invitation to be present here.

The Speaker presented Dr. Alexander Primrose, chairman of the Program Committee of the Canadian Medical Association, who addressed the House as follows:

Mr. Speaker and Members of the House of Delegates: It is a very great pleasure for me to appear here today. I may say that a few years ago you did me the honor of electing me an Honorary Fellow of the American Medical Association. Therefore I can speak from that standpoint as well as past president of the Canadian Medical Association. I share the honors of Dr. McEachern in that respect.

As a fact, we Canadians have appreciated for many years the relationship which has existed in medicine between Canada and the United States. Many of us in Canada are fellows of special societies in the United States, and in that way we cooperate. Occasionally we have had these special societies meeting in Canada. As an instance, last summer we had the privilege of entertaining the American Surgical Association in Toronto. Now we hope that that has extended to the general profession in that the Canadian Medical Association and the American Medical Association may repeat what is occurring at the present moment, and it is a great pleasure and privilege to be here at this initiation of combined meeting. I hope it is only one of many in the future, because I feel that the more we cooperate in the profession of medicine on this continent, the better it is for the profession generally and also for the public, because in so doing we have an influence and a power over the community which we could not otherwise exert. I therefore in these few words express my great personal pleasure in being present here today.

The Speaker presented Dr. T. C. Routley, the secretary of the Canadian Medical Association, who addressed the House:

Mr. Speaker, the Members of the House of Delegates of the American Medical Association. I indeed count it a great privilege to associate myself with my colleagues in saying how deeply we appreciate the honor you have done us in asking us to meet with you in your country and in asking us to appear before you this morning in order that we might say to you face to face what is in our hearts, as has been said by the four previous speakers; namely, we are grateful that you in your wisdom saw fit to allow these nations, one so large, the other so small, and yet with ideals which are always in harmony, to meet together.

I well recall some twelve years ago when it was my privilege to be the official fraternal delegate from Canada to your meeting in San Francisco, throwing out the suggestion that some day we might meet together. Twelve years—quite a long piece to look forward, not so long to look back—and we are together.

Perhaps you will be interested in knowing that we moved our organization down here lock, stock and barrel. We have an attendance in our council of seventy-six out of one hundred and twenty-odd, which we consider an exceptionally splendid turnout.

Then perhaps, Mr. Speaker, one of the most interesting observations I might make is this, that while meeting for the first time outside of our own country in a foreign land we completely revised our constitution and by-laws. I do not desire to appear to be boastful, but if you can find a better demonstration of international good will than that I would like to have it displayed.

I do trust, sir, that the invitation extended to you by our president, coming, as it does, from the hearts of the Canadian people as well as the Canadian physicians, will cause you to find it possible in the not far distant future to accept that invitation and give us the pleasure of endeavoring to show you the best we can our appreciation of your hospitality extended to us on this occasion.

Response of Officers of American Medical Association

The Speaker called on Dr. Walter L. Bierring, President of the American Medical Association, who responded as follows:

Mr. President, Mr. Chairman of the Council, Officers of the Canadian Medical Association, and Fellow Delegates: I know that I speak for you when I express the appreciation of this body for this courteous visit, for this cordial invitation, and for this further manifestation of the unity of interest, symbolized, as it is, by our many efforts together in the extension of English medicine throughout the new world. We feel that we have always been a family scientifically and fraternally and that from now on there shall be a still closer bond between these two nations, divided as they are by an invisible boundary line, common in their interests for the furtherance of scientific medicine and human welfare, and we trust, too, that we may again join hands across the border in their Canadian city. We feel assured that warmth of hospitality, which has ever been characteristic of our Canadian colleagues, will come to us then in fullest measure.

The Speaker called on Dr. J. S. McLester, President-Elect of the American Medical Association, who spoke as follows: I want to read a telegram that I know will give you the same pleasure that it gave me:

The British Medical Association sends cordial greetings to the American and Canadian Medical Associations on occasion of first joint congress, and best wishes for successful meeting. ANDERSON.

The House recessed at 12:30 p. m., to reconvene at 2:30.

Tuesday Afternoon, June 11

The House of Delegates was called to order at 2:30 p. m. by the Speaker, Dr. F. C. Warnshuis.

Report of the Reference Committee on Reports of Board of Trustees and Secretary

Dr. H. H. Shoulders, Chairman, presented the following report:

REPORT OF THE BOARD OF TRUSTEES

Your committee proceeded as follows in its consideration of the matters referred: Those who desired to offer criticism were given an opportunity to do so. No delegate appeared to offer criticism. Secondly, your committee requested officers and bureau heads to appear before the committee in order that they might increase our understanding of the various activities touched on in the report. Your committee found that the Board of Trustees had been unusually active during the past year. It held five meetings, which lasted from two to three days each, and the Executive Committee of the Board met at least once each month, except when there was a regular meeting of the Board. This fact was brought out in the hearings and your committee desired to transmit this finding to you as an indication of the thoughtfulness with which the membership of the Board has approached its responsibilities.

Your committee notes with satisfaction the financial position of the Association as portrayed by the report. This is an exceptional showing for an organization such as ours after some five years of depression.

The publications of the Association are in such form that each is made to serve a definite purpose. The slight financial loss experienced in the publication of some is warranted, in the opinion of your committee, by the benefits derived.

These publications have grown in popularity and usefulness. This progress is due to the sound policies followed, the energies exerted and the intelligence applied to them. The services they render cannot be appraised adequately. Your committee expresses a confidence in the cautious wisdom of the Board in the matter of taking on additional publications that might involve a financial loss without an increasing general benefit to the profession.

Your committee notes with satisfaction the increasing use of the Package Library Department maintained for the benefit of the membership. It is suggested that the delegates present take occasion to inform their constituents of the advantages offered by this service particularly to those members who do not reside in the neighborhood of an extensive medical library

Your committee requested various executives to come before it for the purpose of increasing understanding of the matters touched on in the report. The following persons appeared: Dr. J. H. J. Upham, Chairman of the Board of Trustees; Dr. Rock Sleyster; Dr. Olin West; Dr. Morris Fishbein, Editor of THE JOURNAL; Dr. Paul Nicholas Leech, Secretary of the Council on Pharmacy and Chemistry; Dr. R. G. Leland, Director of the Bureau of Medical Economics; Dr. W. W. Bauer, Director of the Bureau of Health and Public Instruction, and Dr. W. C. Woodward, Director of the Bureau of Legal Medicine and Legislation. Much was brought out in the discussions that took place by the members of the committee and heads of the departments. Dr. Arthur J. Cramp, Director of the Bureau of Investigation, was ill and could not appear.

Each of these officers seemed anxious and cooperative in his efforts to portray to the House the particular services being rendered the Association. The membership of your committee was impressed by the ability and sincerity of these men. Your committee found much evidence of the genius that has molded all these different activities into one coordinated, harmonious activity. For example, your committee found the Bureau of Health and Public Instruction giving aid to the Bureau of Legal Medicine and Legislation and vice versa.

Your committee wishes to commend the Board of Trustees on the care with which it has selected the personnel that heads the bureaus. Your committee would like to discuss many of the facts developed in the hearing, but time will not permit.

Council on Pharmacy and Chemistry: Your committee will mention particularly the activities of the Council on Pharmacy and Chemistry. The secretary of this council reports to us that the membership of the Council, which serves without compensation, devotes many hours each week to the work of the council. Your committee is impressed with the thoroughness with which this department carries on its activities. This is evidenced also by the fact that commercial concerns and quacks have not challenged the accuracy and thoroughness of the work of this council with success before any court of the land. This is a remarkable record when the activities of this council are challenged on every side. This council has been in existence for about thirty years; its prestige with the public, we believe, is growing; the good it has accomplished for the profession and the public cannot be appraised. Your committee wishes to commend the members of the council on the self-sacrificing spirit and thoroughness that characterized their activities.

Bureau of Medical Economics: This portion of the report of the Board of Trustees was referred to the Reference Committee on Medical Economics for consideration.

Bureau of Legal Medicine and Legislation: It is obvious to every delegate that the activities of this bureau could not be covered in any brief report, nor would your committee adopt such a task. Your committee would rather commend the activities of the bureau and the tireless energies with which it has served and is serving the profession in the trying legislative period through which we are passing.

Bureau of Health and Public Instruction: Dr. W. W. Bauer appeared before the committee to elaborate on the report of the Board of Trustees dealing with this bureau. Your committee finds that this bureau has exerted a most wholesome influence in the formation of the policies followed by various lay organizations, such as women's clubs and parent-teacher organizations. Officers of state organizations are to a degree familiar with the fact that socialistic groups have sought the political influence of various women's organizations in the promotion of their ends and purposes. Some of these women's organizations are particularly vulnerable to the approach of the socialistic groups and are unable to make a critical analysis of the matter they are requested to endorse or sponsor. Your committee finds that this bureau has been most helpful in the matter of influencing the course taken by many of the lay groups, with the result that they have become more cautious. Members of this bureau have been placed on important policy forming committees of the National Federation of Women's Clubs. It is suggested that delegates recommend to their state committees on public policy and legislation that they seek the advice of this bureau on all matters touching on the public health policies of state associations and in the matter of dealing with lay groups, and that the component units of state associations use this source of guidance and information in their dealing with local lay organizations in matters affecting the public health.

Your committee would like to emphasize the fact that throughout the hearings it was impressed with the cooperative spirit that is displayed between the various bureaus of the Association. This serves to emphasize the wisdom of conducting all these activities directly under the supervision of the Board of Trustees, which enables the Board of Trustees to coordinate policies and activities in such a way as to accomplish the most beneficial results for the profession as a whole. It gives the Board freedom in the selection of a personnel whose congeniality permits of such cooperative endeavor.

It becomes apparent that time is required for a person, however capable, to acquire a familiarity with the duties to be performed in one of these bureaus or councils. It was made to appear that the Board has given consideration to the matter of selecting understudies who at the proper time will be adequately fitted to take over the duties and responsibilities of these various officers. Your committee commends this action on the part of the Board.

Concerning the action of the Board on the question of liability insurance for members: It approves this decision and action on the part of the Board.

In conclusion, your committee would venture to suggest that reference committees in the future call before them the various bureau heads as well as representatives of the Board of Trustees. It believes that such action would reveal much that would stimulate a higher appreciation and respect for the many duties that are carried on at the headquarters office.

REPORT OF SECRETARY

Your committee found much in the report of the Secretary that merits commendation. It is noted that the membership of the association has increased by more than 1,500 and that the Fellowship has increased.

It is also noted that the activities of the headquarters office in contacting component societies throughout the country has increased materially. Your committee feels that this is an important activity and that it might be further increased with beneficial results in the promotion of the uniformity of our activities throughout the various component units and the promotion of a more cordial understanding and sympathy.

The Annual Conference of Secretaries, however beneficial and helpful, does not suffice to bring the heads of various departments of our national organization before the membership at large in the various states. It is recommended that the delegates present recommend to their constituents that they increasingly use members of the headquarters office on their state programs and in their various committee activities.

Your committee notes with satisfaction a statement by the Secretary to the effect that marked progress has been made during the past year in increasing the efficiency of medical organization throughout the land.

There is embodied in the report of the Secretary a brief statement of the proceedings of the extraordinary session of the House of Delegates. Your committee desires to give added emphasis, if possible, to the importance of this particular report. It should serve to emphasize that organized medicine presents a united front and that critics within our membership constitute an almost infinitesimal proportion of the whole.

Respectfully submitted. H. H. SHOULDERS, Chairman.

HENRY C. MACATEE. E. F. CODY.
B. T. KING. FRED MOORE.

On motion of Dr. Shoulders, seconded by Dr. H. B. Everett, Tennessee, and carried, the portion of the report dealing with the report of the Board of Trustees was adopted.

Dr. Shoulders moved that the section of the report referring to the report of the Secretary be adopted. The motion was seconded by Dr. Ralph A. Fenton, Oregon, and carried.

It was moved by Dr. Shoulders, seconded by Dr. Arthur J. Bedell, New York, and carried, that the report be adopted as a whole.

Executive Session—Tuesday Afternoon, June 11

The Speaker ruled that officers of state organizations and members of county societies and of committees of state organizations, vouched for by their state delegates, would be permitted to remain for the Executive Session of the House.

The Sergeant-at-Arms polled the House, and on motion of Dr. H. B. Everett, Tennessee, seconded by Dr. C. S. Gorsline, Michigan, and carried, the House went into executive session at 1:45 p. m., with the Speaker, Dr. F. C. Warnshuis, in the Chair.

Report of the Special Reference Committee

Dr. Edward R. Cunniffe, Chairman, presented the following report:

The Special Committee appointed to consider all resolutions concerning the control of reproduction begs leave to report that, after a careful study of these resolutions, it recommends that not any of them be approved as introduced. The committee desires to present as a substitute resolution the following, with this preamble: That the House of Delegates declares that nothing in the following resolutions be interpreted as a declaration or action either for or against birth control:

WHEREAS, Under the stimulus of large nonmedical groups, the general use of contraceptives is being advocated and encouraged despite the existing law, not only by the above mentioned groups but by commercial interests as well; and

WHEREAS, The ultimate effect of these measures on the health and general welfare of the population of the United States is unknown if not questionable and should accurately and extensively be studied by the medical profession, in whose care the health of the people rests; and

WHEREAS, The laws both federal and local, governing the physicians in their advice to individual patients, where such advise is given as a therapeutic measure, seem to be complicated, not well understood, and generally unsatisfactory, and their interpretation difficult; therefore be it

Resolved, That a special committee be appointed after due consideration, by the Board of Trustees to study these related problems and to present at least a preliminary report to the House of Delegates of the American Medical Association at the 1936 annual session; and be it further

Resolved, That the trustees be requested to appropriate the funds necessary in order to carry out the purposes of these resolutions.

Respectfully submitted. E. R. CUNNIFFE, Chairman.

T. HENSHAW KELLY. J. ALLEN JACKSON.
E. H. CARY. ALFRED A. WALKER.

The report of the Special Reference Committee was adopted on motion of Dr. Cunniffe, seconded by Dr. George W. Kosmak, New York, and carried, after discussion by Dr. G. Henry Mundt, Illinois.

Report of Reference Committee on Medical Economics

Dr. W. F. Braasch, Chairman, presented the following report:

1. Relative to the resolutions introduced by the Medical Society of the District of Columbia:

(*a*) Resolution on Medical Service Organizations: Your committee feels that no plan for the solution of the problems involved in this resolution has been perfected to such a degree that the American Medical Association would be justified in sponsoring it. Further, your committee recognizes the impracticability of sponsoring any specific plan but approves the establishment of principles governing such plans. The Bureau of Medical Economics has at its disposal most of the plans proposed by the various organizations and stands ready and willing to furnish these on request to any component county or state unit or any individual member thereof. In view of this fact, your committee deems it inadvisable for the American Medical Association to attempt to dictate any form or set-up for medical service but assures the members that the parent organization is always willing to advise and cooperate with any unit desiring assistance. Likewise, your committee would hesitate to recommend to the Board of Trustees an expenditure of a definite sum of money for such purposes as suggested in the resolution because of obvious reasons, among them being the impossibility of estimating the cost. Your committee recommends that this resolution be not passed.

(*b*) Resolution on Preparation of a Statement Regarding Medical Service Experiments: Your committee also realizes the inadvisability of the publication of incomplete experiments in medical service which might be presented to the President of the United States as recommended in this resolution. Your committee recommends that this resolution be not passed.

(*c*) Resolution on Care of the Indigent: In this resolution problems are raised which are similar to those involved in the other resolutions and the impracticability of their execution is quite evident. Your committee would recommend that this resolution be not passed.

2. Your committee believes that the survey made of the work done by the Bureau of Medical Economics during the past year is worthy of the highest commendation. It shows the wide scope of the bureau's activities and the immense amount of excellent work that it is doing. It endorses in detail the various suggestions and recommendations that the survey contains.

Your committee notes with approval that the demand for accurate information on sickness insurance and allied problems is being met by publication of articles in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and in pamphlets. It would also commend the articles on sickness insurance and allied subjects that are published in HYGEIA for the benefit of the laity and would suggest that they appear more frequently. It would also be desirable that messages of a similar nature be more frequently transmitted over the radio. Your committee would recommend that articles on health insurance be sent to newspapers which would publish them. It would also be desirable that material accumulated by the bureau be furnished to editors of state medical journals in order that they may make this material more available to the readers of these publications.

Your committee would encourage every member of the profession to become more interested in the various problems of medical economics and to take advantage of the unlimited

sources of information at the disposal of the Bureau of Medical Economics.

Your committee notes with approval the efforts made by the bureau in making available unbiased data published in the "Handbook on Sickness Insurance" which serve as a guide to debates, theses and addresses such as are carried on by high school and college students on the subject of state medicine, sickness insurance and allied subjects. In view of evident propaganda of a radical nature which is carried on in some schools, increased efforts should be made to disseminate accurate information.

Your committee commends with special emphasis the stand taken by the bureau with regard to group hospitalization. It is convinced that the natural development of such schemes would lead sooner or later to an inclusion of medical service in one form or another with inevitable deterioration in the quality of service. It is quite in agreement with the statement that there is grave doubt that any plan of group hospitalization is using an actuarily sound base for premium rates.

Your committee commends many of the efforts made by local county units to solve problems involved in the care of individuals in the low income group. It would voice its approval of the sentiments expressed at the special session of the House of Delegates in February 1935 in commending these efforts. It also notes with approval the careful survey made by the bureau of the various medical service experiments carried on by the different communities. It would recommend that even greater use be made of the parent organization's presentation of available material on which to base future plans.

Your committee would commend the Bureau of Medical Economics for the interest it has shown in the various problems concerning life, health, accident, casualty and malpractice insurance. It trusts that the bureau will continue its investigations.

Your committee approves the careful study made by the bureau of all available information in regard to relief measures for the indigent sick which is assembled in the report entitled "Care of the Indigent Sick," published last December, and it recommends its use for reference.

In reviewing the ten principles governing the practice of medicine that were adopted by the House of Delegates at the session in Cleveland in 1934, your committee finds that some confusion has arisen in regard to principle 6, which reads as follows:

> However the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

Your committee recommends that principle 6 be changed so as to read as follows:

> In whatever way the cost of medical service may be distributed, it should be paid for by the patient in accordance with his income status and in a manner that is mutually satisfactory.

Your committee recommends the excellent study of the distribution of physicians made by the bureau, which excels in every respect any survey previously made and should be endorsed as a reference for investigation of this subject.

Your committee recommends the thorough survey that has been made of the fee schedules of several hundred county medical societies. The material accumulated should be of great value to any one interested in this subject. In view of the impossibility of standardization of fee schedules, which are necessarily variable and of a temporary nature, it is evident that no standard schedule of fees can be established and maintained by any medical organization.

Your committee approves the timely study that is being made by the Bureau of Medical Economics on the subject of health services in colleges and universities. When completed this promises to be of great interest and practical value, and your committee would commend its speedy completion.

Although your committee appreciates the value of the publication of the work of the bureau in the monthly bulletins and in pamphlets, it nevertheless believes that much of this valuable material is lost to the average practitioner because of its volume. It seems to your committee that it would be highly desirable if the essence of the articles were transcribed in some form so that they could be easily assimilated by the average medical reader. Material accumulated by the bureau should be published in such a manner that it will attract the attention of the casual reader and be easily appreciated.

3. In reviewing that portion of the report of the Bureau of Legal Medicine and Legislation, as printed in the Handbook, dealing with subjects of economic interest, your committee notes with interest the development of the federal health insurance bill. Of particular interest is the fact that the name of the proposed "Social Insurance Board" has been changed to "Social Security Board" and that no duty is now devolved on the board to study or make recommendations with respect to health insurance. The board, however, is at liberty to make such an investigation regarding social insurance under its general commissions.

Under the subject of state health insurance, your committee notes that of the various bills proposed in the various state legislatures for health insurance, including the Epstein bill and bills of similar nature, there is no state in which such health insurance bills have been enacted.

Your committee has read with interest the résumé of the various provisions made by the Federal Emergency Relief Administration and it notes with alarm the unlimited number of persons who are entitled by law to relief under the United States Employees' Compensation Commission. The situation, however, is somewhat mitigated by the fact that persons employed under this act will not be entitled to all the benefits available to regular employees of the federal government but will receive benefits including medical services only for traumatic injuries arising out of and in the course of their employment.

In closing your committee would again commend the great work done by the Bureau of Medical Economics but we would urge the desirability of developing methods by which that storehouse of data accumulated by the bureau be made more readily available and the approach more practical to every member of the medical profession and to each county unit as well as to the various state medical societies.

Respectfully submitted.

W. F. BRAASCH, Chairman.
GUY W. WELLS. HENRY A. LUCE.
FRED B. CLARKE. CHARLES J. WHALEN.

On motions, duly seconded and carried, the report of the Reference Committee on Medical Economics was adopted section by section and as a whole.

On request of Dr. C. E. Mongan, Massachusetts, for information concerning the situation in California with respect to health insurance, Dr. William R. Molony Sr., California, called on Dr. T. Henshaw Kelly, California, who addressed the House.

Report of Committee on Legislative Activities

Dr. E. H. Cary, Chairman, presented the following report, which on motions of Dr. Cary, duly seconded and carried, was adopted by sections and as a whole:

Mr. Speaker, Members of the House of Delegates:

Your Committee on Legislative Activities begs, first, to commend the wisdom of the Board of Trustees and this honorable body in adding to the original committee Dr. R. L. Sensenich. His appointment followed the adoption of the resolution that it would be wise to make more definite contact with certain groups. Just how far the committee could go in this direction was not known, but it had always been the policy of the Committee on Legislative Activities, as constructed, to make important contacts with leaders of other groups, particularly those concerned with legislative affairs. It was decided within the committee that the new member should contact leaders of various organized groups in industry, education and labor and at frequent intervals communicate with the various state secretaries to assist in organizing a broad and direct approach to the lay public in opposition to harmful legislation. It was hoped in this manner to stimulate on the part of the leaders of the different state organizations a real sense of responsibility and the desire to cooperate in all legislative undertakings. A vast amount of this work has been done and undoubtedly much good has been accomplished.

At the Cleveland session your committee reported that a spirit of friendliness and cooperation had been developed between the

leaders of the American Legion and the American Medical Association. Reference was made to the significance of the Reed bill, which contained the four point program of the American Legion. The point of special interest to the medical profession was section two, which opened the way for hospitalization benefits to World War Veterans without service-connected disabilities. Your attention was directed to an oath prescribed within the law, which related to the veteran's financial ability to take care of his own hospital needs; particular emphasis was laid on the great import of this one point. Your committee is happy to state that leaders of the American Legion and the administrator in charge of veterans' affairs have recognized the importance of this oath.

Section 29 of Public Law Numbered 141, Seventy-Third Congress, which amended section 6 of Public Law Numbered 2, as amended by Public Law Numbered 78, Seventy-Third Congress, added the following proviso to the retained provision of section 6:

> Provided, That any veteran of any war who was not dishonorably discharged, suffering from disability, disease, or defect, who is in need of hospitalization or domiciliary care, and is unable to defray the necessary expenses therefor (including transportation to and from Veterans' Administration facility) shall be furnished necessary hospitalization or domiciliary care (including transportation) in any Veterans' Administration facility, within the limitations existing in such facilities, irrespective of whether the disability, disease, or defect was due to service. The statement under oath of the applicant on such form as may be prescribed by the Administrator of Veterans' Affairs shall be accepted as sufficient evidence of inability to defray necessary expense.

You will observe that there is no requirement as to which war or the length of service in connection with these applicants. This is a substantial liberalization of the benefits of domiciliary or hospital care. Section 29 makes it obligatory on the Veterans' Administration to accept the statement under oath of the applicant that he is unable to pay the necessary expenses; however, the provision has been duly supervised. Section 12 of Public Law Numbered 2, Seventy-Third Congress, provides a penalty (a fine of not more than $5,000.00 or imprisonment for not more than two years, or both) for false statements made under oath.

One would think, because of the depression, that the demands of the veterans would have increased during the past year or two. Your committee found, however, while in Washington recently, that there were some 3,000 beds unused in the institutions for patients with tuberculosis, and some 6,000 beds in the hospitals devoted to general medical and surgical cases were not being used. It would seem that the oath, the regulations of the Veterans' Bureau, and the cooperation of the Legion itself, has definitely curtailed the demands for free hospital and medical care by those who are able to pay.

In the last annual report, your committee made reference to a plan then effective in Illinois. There had been organized a medical commission, composed of district, county and post surgeons of the Illinois Department of the American Legion. This commission, as now constituted, acts as an advisory committee to the Rehabilitation Committee in the interests of ex-service men. It has been successful in improving this service and at the same time, has preserved the worth while ideals of the medical profession.

Drs. C. B. Wright and F. S. Crockett of the committee were invited to be present at a conference of the Area D Rehabilitation Committee in Chicago last June. On this occasion Dr. Crockett attended and initiated a conference between the American Medical Association and the American Legion. Later National Commander Hayes and certain of our leaders arranged for such a meeting, which was held in Chicago on Sept. 7, 1934. Drs. Wright, Crockett, Woodward, Fishbein, Sensenich, West, Hayden and Cary were present on behalf of the American Medical Association. Commander Hayes, Messrs. Cliff, Taylor, Miller, and Drs. Williamson and Fredrickson represented the Legion. The various possible beneficial channels of cooperation between the two organizations at interest were discussed at length. Your committee brings to you the major conclusions. For instance:

The contacts between the American Medical Association and the American Legion during the past two years were unanimously considered to have been of value; it was likewise thought that a feeling of confidence and understanding between the two groups had been developed.

Combined interest on medical and hospital matters should be maintained between the authorities of the two organizations.

The members of the Legion committee expressed pleasure that the American Medical Association had, at its Cleveland session, supported the idea of cooperation between the two groups.

It was agreed, subject to the approval of the Legion National Convention, that each department rehabilitation committee or group should invite to its advisory membership two members of the state society pertinent to the American Medical Association.

When consideration leading toward possible requests for new hospital construction should arise, the matter was to be submitted to a committee of the Legion Rehabilitation group, which would include the medical advisory members, for recommendation, before being acted on by a department convention. Under such circumstances it was also agreed to add temporarily to the canvassing committee one representative each from the American Hospital Association and the Veterans' Administration.

Another fundamental conclusion contemplated the continuance of the depression and a greater number of indigents. In this event, if waiting lists were increased and hospital facilities exhausted, the American Medical Association was to participate in seeking a solution satisfactory to the medical profession and to the American Legion.

The conferees reaffirmed a previously agreed on point that veterans suffering with tuberculosis or nervous and mental diseases, requiring hospital care, should be the responsibility of the national government in a federal institution.

Acute cases, widely separated, in no instance were to constitute a legitimate demand for new hospitals. A far more economical and medically effective procedure could be adopted: For any emergency of a service-connected character the disabled veteran would be taken care of irrespective of his location by merely gaining telephonic consent from the proper authorities in that particular district.

Several items, which required additional study because of some rather widespread misunderstandings, are enumerated here:

1. Acute service and non-service connected cases in which added disablement or death is said to have occurred as a result of having to be transported from the places where the onset occurred, to governmental hospitals.

2. Number of cases in which veterans were ordered to government hospitals on recommendation of community physicians or other persons, and on examination found not to require treatment or operative procedure.

3. All procurable records and histories of instances in which acute cases did not receive treatment because of lack of appropriate local hospital facilities or because of inadequate funds or lack of tendency of community hospitals or physicians to extend care.

Your committee has stated only the important conclusions reached in the September conference.

Commander Hayes extended an invitation for representatives of the American Medical Association to be present at the Legion's annual meeting. Dr. F. S. Crockett, member, and Dr. E. H. Cary, Chairman, of the Committee on Legislative Activities, were directed by the Board of Trustees to attend this convention of the American Legion, which was held in Miami, Fla., Oct. 22-25, 1934.

On Nov. 12, 1934, the Chairman of the Committee on Legislative Activities made an extensive report to the Board of Trustees regarding the reception given its representatives and the general attitude of the leaders of the Legion. The recommendations that resulted from the joint conference held Sept. 7, 1934, and referred to herein, were presented to the Rehabilitation Committee of the Legion and endorsed, later being unanimously accepted by the general convention. There is presented for your consideration a summary of what has been done, with the hope that you will express similar approval.

In the November report to the Board of Trustees, the members of your committee attempted to record their own reactions to the many personal contacts made while in Miami, many of which seemed extremely valuable, and when assured of the Legion's acceptance of the recommendations agreed on at the joint conference, they developed the thought that the work accomplished by the Rehabilitation Committee of the American Legion was a part of the present philosophy of the medical profession toward caring for the sick. It was suggested that

any form of sickness insurance, governmentally controlled, would tend to break down hospital and medical benefits already gained. Those leaders who had the interest of the veterans at heart could easily foresee the implications of this new menace to the practice of medicine as it had been developed in this country. The widespread adoption of any one of the several forms of sickness insurance, which had been advocated from many sources, would change the whole philosophy of medical practice, and undoubtedly the special benefits enjoyed by the veterans would be disturbed. At the conclusion of the visit to this convention of the Legion, it was felt that powerful allies had been gained.

The members of the Committee on Legislative Activities, fortunately also members of the House of Delegates, were present at the Special Called Session held in Chicago on February 15-16 this year. When the House finally concluded its work by unanimously accepting the Reference Committee's report, the Committee on Legislative Activities felt that the time was at hand when leaders of other interrelated medical organizations should accept as final the action taken by the House of Delegates —the value of unity within our profession not being underestimated.

The members of special societies are primarily members of the American Medical Association and, as far as we knew, had not been given an opportunity to express an opinion on legislative matters except through their county societies, which are the governing units of our national organization. Your committee recognized that the impression had been created in Washington that medical opinion was greatly divided on the subject of compulsory health insurance. In view of the action of the House of Delegates, it seemed that the responsible leaders of any group of medical men could acknowledge the action of the House and correct the impression that was being used as propaganda for new legislation affecting the medical profession. We who practice medicine realized that any endorsement of the idea of compulsory health insurance on the part of certain medical men represented personal views, for, as previously stated, the members of these special societies had not been given an opportunity therein to indicate their attitude. In this connection, your committee acknowledges with appreciation the high service rendered by the distinguished secretary of the American Academy of Ophthalmology and Otolaryngology, Dr. W. P. Wherry. He was able to arouse the interest of a very large group of our medical men who were also members of special societies, all of whom gave expression of their support of the stand taken by the honorable House of Delegates of the American Medical Association.

On April 26, 1935, Drs. Crockett, Sensenich and Cary of the Committee on Legislative Activities, joined by Dr. Woodward, spent several days in Washington, meeting many old friends and developing new ones.

Methodically different phases of legislation were taken up with the leaders of various groups, and information was received that the highest authorities attached a great deal of importance to the alleged endorsement of compulsory health insurance by the American College of Surgeons. As the matter of the "impression" was considered to be very important, the members of the committee attempted to explain to those in high places the situation as they saw it. A man in high position indicated that he would convey, at an opportune time, to the President of the United States the information that the majority of the membership of the American College of Surgeons supported the action of the American Medical Association against compulsory sickness insurance.

Your committee calls attention to only a few of the many interviews had while on this recent trip.

From several sources in Washington, it was gratifying to learn that officials of the American Legion were sustaining the agreements made between the two groups in earlier meetings. In view of the large number of bills calling for construction of new hospitals, which had flooded Congress, an opportunity was had to verify the question of cooperation between the Legion forces and the American Medical Association.

From three different sources, information was received that no demand would be made for an appropriation for new hospital construction but that additions to hospitals, if such were needed, would be financed through the allotment of funds under control of the President, . . . with the exception of one new hospital for Negroes and the replacement of a small institution located at Bath, N. Y.

Your committee made contact with the Legislative Committee of the American Federation of Labor as well as other important groups representing capital and industry. Many important members of Congress were visited, giving an opportunity of conveying the point of view of the medical profession. From these various contacts it was gained that members of local societies had been active in supporting the decision of this House.

Having in mind that the care of the low income group is a local problem, differing with the locality—the members of the Committee on Legislative Activities in all conferences and public contacts have pointed out that gratifying results are being developed by county societies throughout the country without the need of new legislation.

It was found that it had not been determined whether the United States Public Health Service would be given the care of the sick or differentiation between the employable and nonemployable or whether those under relief would be assigned to that or some other agency. An impression was gained at that time that it would be assigned to that agency. The committee desires to bring to your attention that this would mean the enlargement of the activities of the United States Public Health Service to include the supervision and actual medical treatment of the sick. A very elaborate plan had been worked out, the details of which were given to your committee. In a few words, it was a plan which would be at this time in hands of medical men whose views are in harmony with the position of the Association. It was agreed by all that any workable plan, however sympathetically administered, would tend to promote and establish a health insurance system.

The matter of the differentiation of the employable and nonemployable was then discussed with an official of the Federal Emergency Relief Administration, although it was stated that the Federal Emergency Relief Administration had not been instructed to assume this responsibility, who had recommended that men would be offered employment on the basis of their ability and experience, based on their history of normal employment prior to the depression. If they decline to accept employment, it will be up to some local agency to determine whether or not the individual is employable or in what manner his individual problem should be handled. Your committee points out that this method of handling the emergency is less disturbing, in that it does not contemplate an enlargement of the present method of handling medical relief, which is tolerable only on the basis that it is necessary to meet an emergency and must soon be discontinued. This official also stated that he did not know of any contemplated change in the medical care of the indigent and that the medical care of emergencies arising as a result of employment on the work program would be taken care of by the United States Employees Compensation Commission by physicians appointed under its jurisdiction, as it was at present being handled.

Your committee had the pleasure of discussing with a responsible representative of the President's Economic Committee the many questions which had arisen in that committee. Three of the many statements made were of particular interest:

One was that a definite impression prevailed in the minds of the President and others that the body of the profession as represented in the membership of the American College of Surgeons was committed to sickness insurance. It was considered exceedingly important that this impression be corrected if the facts were otherwise.

Second, and of extreme importance, the impression was gained that compulsory sickness insurance would not be pressed at this, nor very likely at the next session of Congress, but that in all probability a bill would be presented as a sort of "trial horse" in order to obtain the public reaction.

The third important point was that a final report of the Economic Committee had not been written and that that committee was waiting for the chief statistician to report his conclusions for its information.

Knowing the personalities involved and much of the history of these matters, your committee became convinced that it would be wise for its members to go to New York for a conference

with gentlemen who were interested in social legislation, and hoped among other things to learn whether there was any influence being exerted from sources in New York to introduce at this session of Congress a bill of compulsory sickness insurance.

After considering all the factors involved, your committee felt that its duty was to explore all avenues leading to further agitation of this question and believed through past experience that personal contact and a presentation of the medical point of view would lead to a mutual understanding of the unwisdom of propaganda of this type.

As a committee we are hopeful of the future but do not deny that the next two years will require of you your active support in defending the principles you have outlined and the ideals which you cherish.

Respectfully submitted.

E. H. CARY, Chairman.

F. S. CROCKETT.
R. L. SENSENICH. C. B. WRIGHT.

Special Report of the Bureau of Medical Economics

Dr. R. G. Leland, Director of the Bureau of Medical Economics, presented a Special Report, which was referred, without reading, to the Reference Committee on Medical Economics. on motion of Dr. Arthur J. Bedell, New York, seconded by Dr. G. Henry Mundt, Illinois, and carried.

It was moved by Dr. James F. Rooney, New York, seconded by Dr. J. D. Brook, Michigan, and carried, that the House arise from executive session into regular session.

Report of Reference Committee on Miscellaneous Business

Dr. John F. Hagerty, Chairman, presented the following report, stating that with the consent of the introducer of the resolution the committee has left out the words "excluding all other magazines except HYGEIA."

The Reference Committee on Miscellaneous Business has considered the resolution introduced by Dr. Ralph A. Fenton of Oregon, requesting the Director of Civilian Conservation Corps and the Surgeon General and other competent authorities in the war department to supply the magazine HYGEIA to each CCC Camp and other educational departments under their supervision, and approves of the same.

Respectfully submitted.

JOHN F. HAGERTY, Chairman.

E. N. ROBERTS.
D. F. CAMERON. L. J. KOSMINSKY.

On motion of Dr. Hagerty, seconded by Dr. William H. Mayer, Pennsylvania, and carried, the report of the reference committee was adopted.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. J. Richard Kevin, Chairman, submitted the following report:

The following portion of a resolution referred to our committee for consideration reads as follows: "Your committee further recommends that, in order to remove the menace which the Judicial Council reveals with respect to overlapping membership in state associations, the Constitution and By-Laws be so amended as to remove any further difficulty in assigning a member to the state in which he practices."

After studying the Constitution and By-Laws, your committee recommends the following modification in the By-Laws of chapter XI, section 1:

In line 19 after the word "moved" insert "provided no member may hold membership in more than one constituent association at the same time"; also after the word "Provided" in line 19 insert the word "further."

Since the provisions of the By-Laws provide that no changes in said By-Laws can be made without lying on the table twenty-four hours, your committee moves the adoption of the recommendations of the committee and a vote can be taken on Thursday which would allow the amendment to become a law at this session of the House of Delegates.

The House recessed at 4:40 p. m., to meet at 1 p. m., Thursday, June 13.

Third Meeting—Thursday Afternoon, June 13

The House of Delegates was called to order at 1 p. m. by the Speaker, Dr. F. C. Warnshuis.

Report of the Reference Committee on Credentials

Dr. J. D. Brook, Chairman, reported that Dr. E. H. Skinner, Missouri, alternate delegate for Dr. W. H. Breuer, who could not attend the session, did not have his credentials, which were being sent by air mail, but was vouched for by officers of the Missouri State Medical Association. Dr. Brook moved that Dr. E. H. Skinner be seated as a delegate from Missouri, and the motion was seconded by Dr. William H. Seemann, Louisiana, and carried. He stated that 164 delegates had now been seated, and on behalf of the reference committee he thanked the delegates for the promptness with which they registered.

Roll Call

Dr. Olin West, Secretary, called the roll and announced that more than a quorum of the House had responded.

Presentation of Minutes

It was moved by Dr. J. H. Cannon, South Carolina, seconded by Dr. John Z. Brown Sr., Utah, and carried, that the Secretary be authorized to edit the minutes and publish them in THE JOURNAL.

Report of Reference Committee on Legislation and Public Relations

Dr. C. E. Mongan, Chairman, presented the following report:

1. With reference to the resolution offered by Dr. John F. Hagerty, on behalf of the Medical Society of the State of New Jersey, relative to S. 5, the Federal Food, Drug and Cosmetic Bill now pending in Congress, and to the enforcement of the present Federal Food and Drug Act, your committee is informed that the subject matter of this resolution has been and is under consideration by the Board of Trustees.

Your committee recommends, therefore, that this resolution be referred to the Board of Trustees.

2. With reference to the resolution offered by Dr. John F. Hagerty on behalf of the Medical Society of the state of New Jersey, relative to advertising, your committee recognizes the danger inherent in the advertising of drugs and drug products to the laity. It sees difficulty, however, in the way of compliance with the request for the refusal by the American Medical Association and its constituent state associations of all advertising whatsoever offered for publication in the journals controlled by them by pharmaceutical houses that offend against this principle.

The committee recommends that this matter be referred to the Board of Trustees for appropriate action.

3. In reference to the resolution presented by the Section on Laryngology, Otology and Rhinology, through Dr. Burt R. Shurly, your committee calls attention to the fact that the House of Delegates in 1925 and in 1930 approved certain standards of physical fitness for operators of motor vehicles, including visual, auditory and mental standards, and authorized the appointment of a committee to study the subject. It authorized also efforts to educate the public with respect to the dangers of the situation and the promotion of legislation to mitigate such dangers.

Your committee recommends that the House of Delegates reaffirm the action taken by it on this subject in 1925 and in 1930.

4. In reference to the resolution offered by Dr. J. M. Birnie on behalf of the Massachusetts Medical Society, relative to the continuation of the so-called Dick scarlet fever patent and the control of this patent by the Scarlet Fever Commission, your committee reports that within the time at its disposal the assembling of evidence necessary to render judgment with respect to this matter has been impossible.

The committee recommends that the resolution be referred to the Board of Trustees.

5. In regard to the resolution of Dr. J. Richard Kevin, New York, relative to blood grouping tests, your committee finds that two practical problems are involved: First, the amending

of statutes so as to authorize courts to order individuals to submit to blood grouping tests when they are required; second, the taking of such action as may be necessary to acquaint the proper authorities in the legal profession with the existence and reliability of blood grouping tests. Your committee is of the opinion that the question of the advisability of the enactment of statutes authorizing courts to compel individuals to submit to blood grouping tests is one of law rather than of medicine, and that the House of Delegates should take no action with respect to it. With respect to the advisability of action for the purpose of acquainting proper authorities in the legal profession with the existence and reliability of blood grouping tests, your committee recommends reference to the Council on Scientific Assembly for study and report. The matter of blood grouping tests is highly technical and is one on which the membership of the House, unadvised by the Council on Scientific Assembly, should hardly be asked to express an opinion at the present time.

6. In reference to the Supplementary Report of the Board of Trustees in regard to the commercial use of the word "doctor," your committee, while condemning the use of the term "doctor" for commercial purposes, and particularly its fraudulent use for such purposes, recommends that the correction of the evil be left to action under the several state laws concerning advertising and to action before the Federal Trade Commission.

7. Your committee heartily endorses the spirit of the resolutions offered by the Medical Society of the State of New York in regard to restoring and maintaining Reserve Officers Training Camp Units in medical schools, and urges the reestablishment and maintenance of facilities for preliminary military training of medical officers in anticipation of need.

It recommends that a copy of these resolutions be sent to the President, to the Secretary of War, to the Surgeon General of the Army, and to the chairmen of the committees of the Senate and House of Representatives on Military Affairs and Appropriations.

8. In reference to the Supplementary Report of the Board of Trustees, concerning immigrant physicians, a careful study of the records of the United States Bureau of Immigration fails to disclose any tendency toward an increase in the number of such physicians entering the United States; in fact, there seems to be rather a tendency toward a decrease. Moreover, immigrant physicians are not exempted from the provisions of the law allotting quotas of immigrants from the several nations of the world as was stated in the resolution adopted at the February session of the House of Delegates. They are exempted from the requirements of the Contract Labor Law prohibiting the entrance of immigrants generally who enter the United States under prearranged contracts. But no evidence has been found to show that any considerable number of immigrant physicians enter by reason of that exception. For these reasons, your committee recommends that action with respect to the resolution adopted at the Special Session in Chicago in February be held in abeyance until such time as the Board of Trustees finds evidence that will justify the enactment of legislation looking toward the exclusion of such physicians. No immigrant physician should be licensed in the United States under conditions less rigorous than those imposed on citizens of our own country.

Respectfully submitted.

CHARLES E. MONGAN, Chairman.
EDWARD M. PALLETTE.
E. G. WOOD.
JOHN Z. BROWN SR.
SAMUEL P. MENGEL.

On motion of Dr. Mongan, duly seconded and carried, the report of the Reference Committee on Legislation and Public Relations was adopted section by section and as a whole.

Report of Judicial Council

Dr. George Edward Follansbee, Chairman, stated that the Judicial Council felt that the recommendation presented by the Chairman of the Reference Committee on Amendments to the Constitution and By-Laws did not fully cover the situation which that committee was trying to correct. He suggested that he be permitted to present a substitute resolution for the recommendation of the reference committee. On motion, duly seconded by Dr. Arthur T. McCormack, Kentucky, and carried, his suggestion was adopted.

Dr. Follansbee then stated that the report of the Reference Committee on Amendments to the Constitution and By-Laws did not cover the situation so as to make it necessary that each member of a constituent association be a member of a component society in that constituent association, and for that reason it did not fully correct the abuses which the Judicial Council brought up in its report. He added that the Judicial Council has therefore prepared the following resolution, which it hopes that the House will adopt in place of the recommendation offered by the Reference Committee on Amendments to the Constitution and By-Laws:

WHEREAS, It is the intention that membership in this Association shall be based on membership in the component societies of constituent associations; and

WHEREAS, Some constituent associations admit to membership others than members of their component societies, thus favoring a small number; be it

Resolved, That in order to equalize the privileges and duties of all members of the American Medical Association and in order to attain a fair distribution of delegates in this House based on the number of members of component societies forming each constituent association, the first sentence of section 1 of chapter XI of the By-Laws be amended to read "Membership in this Association shall continue only so long as the individual is a member of a component society of the constituent association through which he holds membership."

It was moved that the report of the Judicial Council be adopted. The motion was seconded by Dr. R. W. Fouts, Nebraska, and carried, after discussion by Dr. Arthur J. Bedell, New York; Dr. William D. Chapman, Illinois; Dr. Olin West, Secretary, and Dr. Follansbee.

It was moved that the first sentence of section 1, chapter XI, of the By-Laws be amended to read "Membership in this Association shall continue only so long as the individual is a member of a component society of the constituent association through which he holds membership." The motion was seconded by Dr. Arthur T. McCormack, Kentucky, and carried.

Report of the Reference Committee on Reports of Board of Trustees and Secretary

Dr. H. H. Shoulders, Chairman, presented the following report:

Your committee has considered the statement on integration of the medical profession. At its request, Dr. W. C. Woodward appeared before the committee to furnish such information as he has compiled on the subject.

Your committee developed the following facts: The "integration" of the medical profession implies the organization by statute of all licensed practitioners of medicine within a state into a public corporation, authorized by law to determine the professional fitness of persons seeking admission into the profession in that state and to supervise and regulate the professional activities of every member of it. The corporation would determine who is and who is not eligible for admission into the profession. It would supervise the conduct of every member after he has been admitted, reprimanding, suspending and removing members as circumstances dictate. A member expelled from the corporation would thereby cease to be authorized to practice medicine in the state. The corporation would take over the function of medical examining, licensing and supervising boards, the board of directors elected by the profession functioning as a board of examination and licensure.

If there were an integrated medical profession, every licensed practitioner of medicine in the state would be authorized after its initial organization under the statute creating it to vote for the directors of the corporation. Voting would probably be by districts, so that every part of the state would be represented in the management. The expenses of the corporation would be paid by assessments levied on its members by the directors.

An integrated profession is supposed by some to be better able, by reason of the democratic nature of its organization, to exercise control over the ethical and professional qualifications and conduct of the members of that profession. If the medical profession should be integrated, however, independently of the joint integration with it of osteopaths, chiropractors, naturopaths, and other cultists, *the public* would lose a good deal of

the benefit of integration, for it is those cult groups that particularly need such supervision and control as integration implies. On the other hand, if all practitioners of the healing art were integrated into a single corporation, the votes of the osteopathic, chiropractic, naturopathic and similar groups would endanger the standards of the medical profession, and conceivably, by a combination of members of those cults, control might pass from the medical profession.

The disadvantage of integration lies in the fact that the average member of the corporation would be less likely to have a professional interest in its ethical, social and scientific activities than does the average member of such voluntary organizations as exist today. Being forced into the organization without any desire on his part and without his consent, he would lack *esprit de corps,* and the poorly qualified, uninterested and unambitious member might well tend to degrade the standards of the whole group. There is no reason, however, why a medical profession integrated along the lines outlined, for purposes of ethical and professional control, should not be supplemented by private organizations devoting themselves to the protection and advancement of the science and art of healing in all its aspects.

Your committee is impressed with the possibilities for good in such a form of organization. It feels, however, that its information on the subject is not sufficient to warrant the formation of a definite policy on the subject by the House of Delegates at this time.

Your committee therefore recommends that the matter be referred to the Board of Trustees with the recommendation that the Board give careful study to the subject through the proper officers and bureaus of the Association, and that information thus gained be furnished to the various state associations by means of bulletins and communications from time to time. Your committee recommends further that the Board of Trustees make recommendations to the House at its next regular session concerning a policy on the subject.

Respectfully submitted.

H. H. SHOULDERS, Chairman.
BRIEN T. KING.
HENRY C. MACATEE.
E. F. CODY.
FRED MOORE.

On motion of Dr. Shoulders, seconded by Dr. Leonce J. Kosminsky, Arkansas, and carried, the report of the reference committee was adopted.

Resolutions Opposing Acceptance of Commissions and Limiting Use of Audiometers, from Section on Laryngology, Otology and Rhinology

Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, presented the following resolutions unanimously adopted by that section:

WHEREAS, Certain agents and distributors of electric hearing devices have offered to physicians a commission or bonus for referring to them hard of hearing persons to whom they effect a sale; therefore be it

Resolved, By the Section on Laryngology, Otology and Rhinology of the American Medical Association that it condemns as unethical and unfair to the purchaser the practice on the part of any agent or distributor of a hearing device who offers to pay to a physician, or any one not an authorized agent, any commission or bonus for referring a person to whom he makes a successful sale. The acceptance of such commission by a physician is interpreted as a violation of the principles of ethical practice; and be it further

Resolved, That it is the sense of this section that the use of audiometers in the hands of persons other than regularly qualified physicians be restricted to the measuring of hearing acuity for the purpose of detecting hearing loss and for selecting or constructing hearing aids best suited to the special needs of the individual hard of hearing person.

Dr. Shurly moved the adoption of the resolutions, and the motion was seconded by Dr. Ralph A. Fenton, Oregon, and discussed by Drs. G. Henry Mundt, Illinois; Dr. Austin A. Hayden, Trustee, and Dr. Shurly.

On motion of Dr. Arthur T. McCormack, Kentucky, seconded by Dr. Henry W. Meyerding, Section on Orthopedic Surgery, and carried, the resolutions were referred to the Judicial Council, with the request that that Council prepare and present to the profession an interpretation in consonance with the Principles of Medical Ethics.

Resolutions on Teaching and Consultation, from the Section on Ophthalmology

Dr. Emory Hill, Section on Ophthalmology, presented the following resolutions, which were adopted on motion of Dr. Hill, seconded by Dr. Arthur J. Bedell, New York, and carried:

WHEREAS, There have been many complaints regarding the action of some ophthalmologists in giving lectures to and consulting with opticians and optometrists; and

WHEREAS, It is universally conceded that to care for the diseases and conditions of the human eye demands the unusual knowledge of a graduate physician who has been especially prepared; and

WHEREAS, The eye is an integral part of the body; and

WHEREAS, No one but a physician so trained should be permitted to diagnose, treat or prescribe for eye conditions; and

WHEREAS, Lecture, address or any other form of instruction to opticians and optometrists by ophthalmologists is not only a breach of the Principles of Medical Ethics, which control our professional relationships, but is also to the detriment of the ocular health of the public by giving it a false sense of security; and

WHEREAS, General health and ocular comfort depend on the best medical care; therefore be it

Resolved, That the Section on Ophthalmology of the American Medical Association declares that it is unethical for any member of the American Medical Association to give lectures or courses of instruction to or consult with any one not associated with the actual medical service; and be it further

Resolved, That the House of Delegates of the American Medical Association be asked to make a ruling to this effect.

Respectfully submitted.

SECTION ON OPHTHALMOLOGY,
ARTHUR J. BEDELL, Chairman.
PARKER HEATH, Secretary.

Nomination for Honorary Fellowship

Dr. Emory Hill, Section on Ophthalmology, presented the following nomination of Mr. Leslie Paton, London, England, for Honorary Fellowship, which was referred to the Council on Scientific Assembly:

Mr. Speaker and Members of the House of Delegates:

The Section on Ophthalmology respectfully requests that Mr. Leslie Paton, M.A., B.Ch., M.B., F.R.C.S., of London, England, be made an Honorary Fellow of the American Medical Association.

Mr. Paton is a member of the Royal Academy; fellow and vice president of the Royal Society of Medicine; past president of the Section on Neurology, Royal Society of Medicine; past president of the Ophthalmological Society of the United Kingdom; member of the Ophthalmologischen Gesellschaft, Heidelberg; honorary member of the Société française d'ophtalmologie, Sociedad oftalmológica hispano-americana, International Ophthalmic Council and the Japanese and Hungarian ophthalmologic societies. He is the author of many articles and an authority in ophthalmology and neurology.

This request is endorsed by the Section on Ophthalmology.

ARTHUR J. BEDELL, Chairman.
PARKER HEATH, Secretary.

Executive Session, Thursday Afternoon, June 13

On motion of Dr. Arthur J. Bedell, New York, seconded by Dr. H. B. Everett, Tennessee, and carried, the House went into executive session at 2:10 p. m.

Report of Reference Committee on Medical Economics

Dr. W. F. Braasch, Chairman, presented the following report:

On reviewing the special report issued by the Bureau of Medical Economics presented at the Executive Session of the House of Delegates on Tuesday afternoon, your committee is first impressed with its excellence and completeness. In consideration of the details of this report, your committee desires to call your attention to that part of the report on pages 20 to 23 inclusive which deals with the dangers inherent in any plan for distribution of medical care other than the present plan. Specifically, these dangers are listed under violations of medical ethics, methods of collection of payment for medical care, inflexibility of plans, and violations of ethics by groups. Your careful perusal of these pages is recommended.

Your further attention is directed to any conflict that might arise as a result of nonobservation of the ten principles laid down at the Cleveland session in 1934 and reaffirmed at the Special Session of the House of Delegates in February 1935 in Chicago, which are principles of a positive nature. These warnings may seem superfluous but we must remember that we are embarking on uncharted seas and it behooves us to proceed cautiously. Your committee suggests the insertion of the following statement just prior to the subheading "Good Plans Subject to Imitations" on page 24:

In designing and operating plans to provide medical care for the indigent and low income groups, county medical societies may well consider the dangerous, destructive and unethical tendencies which even the most carefully conceived and constructed plan may assume. Some of these may follow an incomplete or inaccurate preliminary estimate of the medical situation; some may result from the unpredictable factor of human nature; others may follow as the natural outcome of changes in the general economic conditions entirely beyond the control of the medical profession. Regardless of the causative factors, which may vary in different communities, county medical societies must be prepared to recognize and deal with complications affecting the organization of medical care under the specifications of a county plan just as their members are trained to deal with complications which often occur to change the course of the diseases which they treat. Some of these dangers and complications are:

1. The adoption and operation of a medical plan where it is unnecessary.
2. The stimulus aroused by good plans among irresponsible organizers to develop and operate imitations and counterfeits.
3. The establishment in medical practice of dangerous patterns following the adoption of undesirable types of plans.
4. The compromise of medical societies in the corporate practice of medicine or in the operation of insurance companies as a result of an insufficient study of state statutes and case law.
5. Failure, in the operation of a plan, to conform to the Principles of Medical Ethics.
6. The almost inevitable transition of voluntary insurance plans into compulsory contributory sickness insurance systems operated by the state.
7. The difficulties involved in or the failure adequately to provide for complete control of medical affairs by the medical profession.
8. The "freezing" of medical fees at a point below that which is consistent with good medical service.
9. Failure to bear constantly in mind that a medical society plan is an experiment in the methods of distributing medical service and that it may have only a temporary usefulness, may need frequent or drastic modifications or may need to be discarded entirely.
10. Medical society plans must not be considered or accepted as a substitute for the regular practice of medicine as applied to the majority of people. If it is believed such plans may be useful, they should be considered merely as supplementary facilities in the distribution of medical service. They should be used only so long and in such a manner as they serve efficiently to make more easily available to low income groups a high quality of medical care.

On page 16 of the report, your committee recommends that the sentence "Except for the indigent, the provision for medical service in minor illnesses is seldom an important problem" be changed to read "Except for the indigent, the provision for medical service in minor illnesses is seldom an important *economic* problem."

Your committee recommends a modification of the statement on the bottom of page 16: "Economic complexities make it impossible for the modern physician to have such detailed individual knowledge. Accurate appraisal now requires expert specialized work too extensive to be undertaken by the physician himself." Your committee believes that the family doctor often knows as much about the economic status of his patient as do social service workers. Although the periodic investigation by the trained social worker has a definite place, such social investigation should not supplant the knowledge acquired by the family physician in his intimate contacts.

Your committee believes that the first paragraph of the quoted section on page 17 referring to experiments conducted in Oakland County, Mich., be deleted and that the quotation be followed by the following paragraph: "Social service work as applied to medical service should always be guided by medical opinion."

A paragraph on page 26 of the special report reads: "Regardless of whether or not a plan to make medical services more easily available in a community is thought advisable, it is to be hoped that the medical profession will never surrender or renounce that age-old privilege of relieving the suffering of those who are unable to pay." Your committee suggests that this paragraph be changed to read: "Regardless of whether or not a plan to make medical service more easily available in a community is thought advisable, it is *believed* that the medical profession will never surrender or renounce that age-old privilege of relieving the suffering of those who are unable to pay."

Your committee suggests that the contemplation of medical society plans should be a joint responsibility of state and county medical societies, and that county medical societies should confer with the officers of their respective state associations relative to principles and procedures in order that the necessity for and nature of medical service plans be properly safeguarded.

Your committee would recommend that adequate provision be made for the continuance and expansion of the most important work of the Bureau of Medical Economics.

Your committee would recommend that this report be made available to the state organizations for distribution by their officers to every component member with the feeling that it is highly desirable that the information in this report be read by every physician.

Your committee wishes again to commend the Bureau of Medical Economics for the excellent special report which it has made and also wishes to commend the Board of Trustees on the complete cooperation that that Board has at all times given to the Director of the Bureau of Medical Economics.

Respectfully submitted.

W. F. BRAASCH, Chairman.
CHARLES J. WHALEN.
FRED B. CLARKE.
GUY W. WELLS.
H. A. LUCE.

On motion of Dr. Braasch, duly seconded and carried, the report was adopted by sections and as a whole.

It was moved by Dr. Arthur J. Bedell, New York, seconded by Dr. William H. Mayer, Pennsylvania, and carried, that a few paragraphs indicating the general trend of the action of the House be prepared for release to the press and that the complete report be not released until it has been modified according to the recommendations of the Reference Committee on Medical Economics.

Conference with Leaders of American College of Surgeons

Dr. E. H. Cary, Texas, and Dr. James S. McLester, President, addressed the House on their impressions gained from a conference with leaders of the American College of Surgeons who agreed with the action of the House of Delegates of the American Medical Association taken at its session held in Chicago in February 1935.

The House arose from Executive Session on motion of Dr. James F. Rooney, New York, seconded by Dr. J. H. Cannon, South Carolina, and carried.

Dr. Olin West, Secretary, on request of the Speaker, read section 1, chapter IV, of the By-Laws referring to nominations.

ELECTION OF OFFICERS

Election of President-Elect

Dr. J. C. Whalen, Illinois, nominated for President-Elect Dr. Charles E. Humiston, Chicago.

Dr. Brien T. King, Washington, nominated Dr. J. Tate Mason, Seattle.

Dr. William H. Mayer, Pennsylvania, nominated Dr. J. Norman Henry, Philadelphia.

Dr. Emory Hill, Section on Ophthalmology, nominated Dr. Harvey Cushing, New Haven, Conn.

The speaker declared the nominations closed and appointed as tellers Drs. G. Henry Mundt, Illinois; J. R. McVay, Missouri; James Q. Graves, Louisiana; Vernon L. Treynor, Iowa, and C. W. Roberts, Georgia.

The Secretary announced that 158 delegates had been recorded as present and that 155 votes had been cast, of which Dr. Charles E. Humiston received 40; Dr. J. Tate Mason, 64; Dr. J. Norman Henry, 22, and Dr. Harvey Cushing, 29.

The Speaker announced that as no candidate had received a majority vote, a second ballot would be taken, eliminating the name of the one having received the least number of votes.

The Secretary announced that 158 delegates had recorded their presence and that 152 votes had been cast, of which Dr. Charles E. Humiston received 34; Dr. J. Tate Mason, 87, and Dr. Harvey Cushing, 31.

The Speaker declared Dr. J. Tate Mason, having received the majority of the votes cast, elected President-Elect of the American Medical Association.

Election of Vice President

Dr. J. H. Cannon, South Carolina, nominated for Vice President Dr. Kenneth M. Lynch, Charleston, S. C., and the nomination was seconded by Dr. Walter E. Vest, West Virginia.

Dr. William H. Mayer, Pennsylvania, moved that the nominations be closed, and the motion was seconded by Dr. Arthur J. Bedell, New York, and carried.

On motion of Dr. Arthur C. Morgan, Pennsylvania, seconded by Dr. William H. Myers, Georgia, and carried, the Secretary cast the ballot of the House for Dr. Kenneth M. Lynch as Vice President for the ensuing year, and the Speaker declared Dr. Lynch elected Vice President.

Election of Secretary

Dr. Orrin S. Wightman, New York, nominated Dr. Olin West, Chicago, to succeed himself as Secretary of the American Medical Association. On motion of Dr. A. A. Walker, Alabama, seconded by several and carried unanimously, the nominations were closed.

On motion of Dr. A. A. Walker, Alabama, seconded by Dr. Horace Reed, Oklahoma, and carried, the Speaker cast the ballot of the House for Dr. Olin West as Secretary of the American Medical Association and declared Dr. West elected Secretary for the ensuing year.

Election of Treasurer

Dr. J. H. J. Upham, Chairman of the Board of Trustees, nominated for the office of Treasurer Dr. Herman L. Kretschmer, Chicago. The nomination was seconded by Dr. W. F. Braasch, Minnesota. Dr. Arthur T. McCormack, Kentucky, moved that the nominations be closed, and the motion was seconded by Dr. Joseph F. Smith, Wisconsin, and carried.

Dr. B. F. Bailey, Nebraska, moved that the Secretary be instructed to cast the ballot of the House of Delegates for Dr. Herman L. Kretschmer, Chicago, as Treasurer. The motion was seconded by Dr. J. H. Cannon, South Carolina, and carried, and the Secretary cast the vote of the House for Dr. Herman L. Kretschmer, Chicago, as Treasurer of the Association for the ensuing year and the Speaker declared Dr. Kretschmer so elected.

Election of Speaker of the House of Delegates

Dr. James S. McLester, President, took the chair and announced that the next order of business was the election of a Speaker of the House of Delegates.

Dr. James F. Rooney, New York, nominated for Speaker of the House of Delegates Dr. Nathan B. Van Etten, New York.

Dr. T. Henshaw Kelly, California, nominated Dr. F. C. Warnshuis, San Francisco, and the nomination was seconded by Dr. B. F. Bailey, Nebraska.

On motion of Dr. J. D. Brook, Michigan, seconded by Dr. Walter F. Donaldson, Pennsylvania, and carried, the nominations were closed and the tellers spread the ballot.

The Secretary announced that 159 delegates had been recorded as present and that 151 votes had been cast, of which Dr. Nathan B. Van Etten received 80 and Dr. F. C. Warnshuis 71.

The President declared Dr. Nathan B. Van Etten, New York, elected Speaker of the House of Delegates for the ensuing year.

Election of Vice Speaker of the House of Delegates

The Speaker, Dr. F. C. Warnshuis, resumed the chair and after presenting Dr. Nathan B. Van Etten, the newly elected Speaker, declared that nominations were in order for Vice Speaker of the House.

Dr. B. F. Bailey, Nebraska, nominated for Vice Speaker Dr. R. W. Fouts, Omaha.

Dr. H. B. Everett, Tennessee, nominated Dr. H. H. Shoulders, Nashville, Tenn.

The Speaker declared the nominations closed and requested the tellers to spread the ballot.

The Secretary announced that 159 delegates had recorded their presence and that 143 votes had been cast, of which Dr. R. W. Fouts had received 54 and Dr. H. H. Shoulders 89.

The Speaker declared Dr. H. H. Shoulders, Nashville, Tenn., elected Vice Speaker of the House of Delegates of the American Medical Association, as he had received the majority of the votes cast.

Address of President-Elect J. Tate Mason

Gentlemen of the House, I want to thank you from the bottom of my heart for the honor that you have bestowed on me, and I hope that I shall be worthy; I shall try to be worthy throughout my régime.

As I came up the steps with the men from my state I could not help remembering that forty-two years ago this month my father, an old country practitioner of Virginia, brought me to Atlantic City, and on the sands here close to this hotel told me something of the ethics and the principles of ethics of medicine. I want you gentlemen to know that I think that those principles have changed none up to date. I know that in these changing times when some of our men have been somewhat apprehensive and some have been restless, if those men will just look over the last fifty years of the service that the physicians of America have given to this country they cannot be but satisfied. I feel that probably the only thing that we need to push forward at the present time is to know how to teach these men what has gone on before and to have more cooperation probably among ourselves than we have had in the past.

Election of Trustees

The Speaker declared the next order of business to be the election of a trustee for a term of five years to succeed Dr. Joseph A. Pettit, Portland, Ore., whose term expired this year and who, according to the By-Laws, was not eligible for reelection.

Dr. William R. Molony Sr., California, nominated Dr. George H. Kress, Los Angeles.

Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, nominated Dr. Ralph A. Fenton, Portland, Ore.

Dr. Bundy Allen, Florida, nominated Dr. Albert Soiland, Los Angeles.

As there were no other nominations, the Speaker declared the nominations closed and asked the tellers to spread the ballot.

The Secretary announced that 159 delegates had been recorded as present and that 141 votes had been cast, of which Dr. George H. Kress received 40, Dr. Ralph A. Fenton 79 and Dr. Albert Soiland 22.

The Speaker declared Dr. Ralph A. Fenton, Portland, Ore., elected for a term of five years to succeed Dr. Joseph A Pettit, since Dr. Fenton had received the majority of the votes cast.

The Speaker called for nominations for the office of trustee to be elected for a term of five years to succeed Dr. J. H. J. Upham, Columbus, Ohio, whose term expired this year and who, according to the By-Laws, was not eligible for reelection.

Dr. R. L. Sensenich, Indiana, nominated Dr. F. S. Crockett, La Fayette, Ind.

Dr. Walter E. Vest, West Virginia, nominated Dr. James R. Bloss, Huntington, W. Va.

Dr. L. J. Hirschman, Michigan, nominated Dr. Carl F. Moll, Flint, Mich.

The Speaker, hearing no other nominations, declared the nominations closed and asked that the ballots be prepared.

The Secretary stated that 159 delegates had been recorded as present and that 142 votes had been cast, of which Dr. F. S. Crockett received 33, Dr. James R. Bloss 64 and Dr. C. F. Moll 45.

Since no one had received a majority of the votes cast, a second ballot was spread for the two candidates having received the greatest number of votes.

The Secretary announced that 159 delegates had recorded their attendance and that 133 votes had been cast, of which Dr. James R. Bloss received 89, and Dr. Carl F. Moll 44.

The Speaker declared Dr. James R. Bloss, Huntington, W. Va., elected for a term of five years to succeed Dr. J. H. J. Upham, since Dr. Bloss had received the majority of the votes cast.

Nominations for Standing Committees

Dr. James S. McLester, President, presented the following nominations for standing committees:

Judicial Council: Dr. George Edward Follansbee, Cleveland, to succeed himself for a term ending in 1940.

Council on Medical Education and Hospitals: Dr. Reginald Fitz, Boston, to succeed himself for a term ending in 1942.

Council on Scientific Assembly: Dr. A. A. Walker, Birmingham, Ala., to succeed Dr. Frank Smithies, for a term ending in 1940.

On motion of Dr. Arthur T. McCormack, Kentucky, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, the House confirmed the nominations.

Election of Honorary, Affiliate and Associate Fellows

APPLICANT FOR HONORARY FELLOWSHIP

On motion of Dr. Arthur J. Bedell, New York, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, Mr. Leslie Paton, London, England, whose nomination by the Section on Ophthalmology had been approved by the Council on Scientific Assembly, was elected to Honorary Fellowship.

APPLICANTS FOR AFFILIATE FELLOWSHIP APPROVED BY THE COUNCIL ON SCIENTIFIC ASSEMBLY

Barton, A. A., Plains, Pa.
Brainard, B. F., Martin City, Mo.
Fischer, Louis, New York.
Gamble, William E., Los Angeles.
Harrington, Arthur H., Providence, R. I.
Hawley, C. W., Chicago.
Herz, Karl, Chicago.
Jepson, William, Sioux City, Iowa.
Marvel, Philip, Atlantic City, N. J.
Raymond, Charles N., Providence, R. I.
Roskoten, O. J., Peoria, Ill.
Shoemaker, William A., St. Louis, Mo.
Sturtevant, James S., Dixfield, Maine.
Worthington, George B., San Diego, Calif.

APPLICANT FOR ASSOCIATE FELLOWSHIP FROM AMERICAN MEDICAL MISSIONARY APPROVED BY THE JUDICIAL COUNCIL

Gentry, W. Max, Chungking, West China.

APPLICANTS FOR ASSOCIATE FELLOWSHIP NOMINATED BY THE SECTIONS INDICATED

PRACTICE OF MEDICINE

Schwitalla, Alphonse M., St. Louis.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Goodfriend, David J., Philadelphia.
Koenig, Oscar, Newark, N. J.

PHARMACOLOGY AND THERAPEUTICS

MacTavish, William C., New York.
Muehlberger, Clarence W., Chicago.
Severac, Marie, Philadelphia.

PATHOLOGY AND PHYSIOLOGY

Cannon, Paul R., Chicago.
Day, Paul L., Little Rock, Ark.
Hartman, Frank A., Columbus, Ohio.
Woglom, William H., New York.

NERVOUS AND MENTAL DISEASES

Hincks, C. M., New York.
Spiegel, Ernest A., Philadelphia.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

Heiser, Victor G., New York.
Kitchen, Stuart F., Tallahassee, Fla.

On motion of Dr. James F. Rooney, New York, seconded by Dr. C. W. Roberts, Georgia, and carried, the applicants for Affiliate and Associate Fellowship were elected as Affiliate or Associate Fellows as indicated.

Place of 1936 Annual Session

The Speaker announced that the next order of business was the selection of the place of the 1936 annual session and called on the Board of Trustees for nominations.

Dr. J. H. J. Upham, chairman of the Board of Trustees, presented the following report:

Mr. Speaker and Members of the House: The Board of Trustees reports that invitations have been received from Indianapolis; Miami, Fla.; Chicago, and Kansas City, Mo. Representatives of the Board of Trustees have investigated the facilities of the cities from which invitations have been received, and the Board reports that Kansas City, Mo., and Chicago have adequate facilities for taking care of the annual session.

Dr. J. R. McVay, Missouri, extended an invitation from the medical profession of Missouri and Kansas to have the American Medical Association meet in Kansas City, Mo., in 1936. The nomination of Kansas City was seconded by several.

Dr. Isaac A. Abt, Section on Pediatrics, extended an invitation from the medical profession of Chicago to have the Association meet in that city in 1936.

The Speaker requested that the ballot be spread, and the Secretary announced that 159 delegates had been recorded as present and that 126 votes had been cast, of which Chicago received 13 and Kansas City, Mo., 113.

The Speaker declared that the House of Delegates had selected Kansas City, Mo., for its 1936 session.

Vote of Appreciation

Dr. J. Newton Hunsberger, Pennsylvania, moved that the House of Delegates extend a vote of appreciation to all those who had been concerned with the Atlantic City session and who had made the stay so pleasant and profitable. The motion was seconded by Dr. E. G. Wood, Tennessee, and carried unanimously.

The House of Delegates adjourned sine die at 4:45 p. m.

(To be continued)

REGISTRATION AT ATLANTIC CITY

The total registration at the Atlantic City session was 8,469. Below are given two summaries—one by sections and one by states:

Registration by Sections

Practice of Medicine	2,592
Surgery, General and Abdominal	1,144
Obstetrics, Gynecology and Abdominal Surgery	600
Ophthalmology	445
Laryngology, Otology and Rhinology	355
Pediatrics	523
Pharmacology and Therapeutics	50
Pathology and Physiology	246
Nervous and Mental Diseases	232
Dermatology and Syphilology	245
Preventive and Industrial Medicine and Public Health	256
Urology	285
Orthopedic Surgery	241
Gastro-Enterology and Proctology	297
Radiology	369
Miscellaneous Topics:	
Session on Anesthesia	95
Session on History of Medicine	4
Session on Military Medicine	24
Two or more sections or no section marked	466
Total	8,469

Registration by States

Alabama	63	New Hampshire	8
Arizona	12	New Jersey	1,005
Arkansas	14	New Mexico	5
California	111	New York	1,462
Colorado	38	North Carolina	103
Connecticut	168	North Dakota	11
Delaware	64	Ohio	366
District of Columbia	196	Oklahoma	32
Florida	67	Oregon	13
Georgia	70	Pennsylvania	2,069
Idaho	2	Rhode Island	39
Illinois	324	South Carolina	53
Indiana	122	South Dakota	8
Iowa	58	Tennessee	74
Kansas	22	Texas	79
Kentucky	57	Utah	11
Louisiana	34	Vermont	13
Maine	9	Virginia	177
Maryland	246	Washington	12
Massachusetts	269	West Virginia	85
Michigan	223	Wisconsin	84
Minnesota	78	Wyoming	5
Mississippi	10	Canada	303
Missouri	96	Miscellaneous	60
Montana	9		
Nebraska	30	Total	8,469

Association News

THE ATLANTIC CITY SESSION

Report of the Golf Tournament

One hundred and thirty-two medical golfers from the United States and Canada played the interesting and baffling Northfield Country Club course in Atlantic City on the occasion of the twenty-first annual tournament of the American Medical Golfing Association. Rain postponed play in the tournament from Monday to Tuesday, June 11, when the contestants teed off from 7:30 a. m. to 3 p. m. Thirty-six holes were played by most of the entrants, but about twenty were satisfied with eighteen holes and entered the events limited to that play. Sixty trophies and prizes were awarded after the dinner, which was presided over by Dr. Charles Lukens of Toledo, Ohio. Dr. Walt P. Conaway, chairman of the Atlantic City Golf Committee, made the presentations.

CHAMPIONSHIP WON BY DR. L. C. FOSTER OF NEW HAVEN

The championship was won by Dr. L. C. Foster of New Haven, Conn., who turned in a score of 80-79—159 for thirty-six holes. He received the famous Will Walter Trophy. The Handicap Championship was won by Dr. W. H. Taylor of Greensburg, Pa., who bagged the Detroit Trophy. The Eighteen Hole Championship went to Dr. L. W. Pumphrey of Pittsburgh, who took home the Golden State Trophy. Second prize in this event went to Dr. E. G. Brittain of Bound Brook, N. J., third prize to Dr. W. T. Lemmon of Philadelphia, and fourth prize to Dr. D. M. Houston of Seattle. The Eighteen Hole Handicap Championship was awarded to Dr. D. Ray Murdock of Greensburg, Pa., who won the Ben Thomas Trophy. Second prize went to Dr. Jacob Manting of Detroit.

DRS. CULLOM AND CROSKEY ARE WINNERS

The Maturity Event, limited to Fellows over 60 years of age, for the best eighteen holes net, was won by Dr. M. M. Cullom of Nashville, Tenn. He received the Minneapolis Trophy. Second prize went to Dr. George Hall, Chicago, and third prize to Dr. H. V. Hubbard of Philadelphia. Dr. John Welsh Croskey of Philadelphia won the Old Guard Championship, awarded to past presidents of the A. M. G. A. Dr. Croskey carded a sterling 71 net for eighteen holes and received the Wendell Phillips Trophy. Second prize was won by Dr. Will Walter of Charlottesville, Va., who organized the A. M. G. A. in 1915, and third prize by Dr. E. G. Zabriskie of New York

FIVE FLIGHTS

The Championship Flight low gross was won by Dr. R. M. Harris of Miami, Fla., who gained the St. Louis Trophy. Other winners were Dr. J. J. Marek of Cleveland, Dr. R. C. Glenn of State College, Pa., and Dr. J. M. Dorsey of Rochester, Minn. The net prizes in this flight went to Dr. A. H. Weiland of Miami, who won the President's Trophy, presented by Dr. Charles Lukens. Dr. S. G. Pontius of Lancaster, Pa., won the second low net prize.

The First Flight gross winners were Dr. Roy E. Emanuel of Chickasha, Okla.; Dr. W. C. Jones of Miami, Fla., and Dr. D. C. Brennan of Akron, Ohio. First prize among the nets was the Chairman's Trophy, presented by Dr. Walt P. Conaway and won by Dr. A. C. Smith of Wooster, Ohio. Second prize went to Dr. H. R. Mather of Latrobe, Pa., and third prize to Dr. W. B. Swartley of Philadelphia.

The Second Flight gross winners were Dr. C. P. Rutledge of Shreveport, La.; Dr. O. E. Satter of Prairie du Chien, Wis., and Dr. Harry Mock of Chicago. Net prizes went to Dr. F. A. Carroll of Scranton, Pa., and Dr. J. E. Runnells of Scotch Plains, N. J.

The Third Flight gross winners were Dr. H. M. Schuffell of Canton, Ohio; Dr. S. B. Muncaster of Washington, D. C., and Dr. B. R. Almquest of Pittsburgh. Net winners were Dr. W. Earl Clark of Washington, D. C.; Dr. Anthony Bassler of New York, and Dr. John B. Morgan of Cleveland.

The Fourth Flight winners (net only) were Dr. J. S. Anderson of Greensburg, Pa.; Dr. O. B. Snyder of Greensburg, Pa.; Dr. O. A. Brines of Detroit; Dr. H. R. Miner of Falls City, Neb.; Dr. H. N. Dorman of Washington, D. C.; Dr. Joseph F. Hawkins of Providence, R. I.; Dr. H. O. Barnes of Los Angeles, and Dr. J. J. Waygood of Philadelphia.

The Kickers' Handicap was won by President Lukens of Toledo; Dr. G. G. Johnson of San Francisco; Dr. C. E. Moore of Harrisburg, Pa.; Dr. J. W. Rae of Toledo, Ohio; Dr. W. H. McCombs of Pittsburgh; Dr. L. P. Sheedy of Pittsburgh; Dr. W. A. Cook of Tulsa, Okla., and Dr. W. L. Crawford of Rockford, Ill.

DR. W. E. GRAY WINS INTERNATIONAL EVENT

Dr. W. E. Gray of Milltown, New Brunswick, won the International Event and took home the beautiful trophy presented by Dr. Lukens, president of the A. M. G. A. The Ontario Event, symbolic of the Canadian Medical Association golf championship, was won by Dr. L. J. Austin of Kingston, Ont. Dr. F. E. Sinclair of Westminster, B. C., was second in this event.

Three special prizes were awarded: For the Fellow with twelve children, Dr. A. C. Smith was presented with an appropriate prize; the best dressed man, Dr. D. J. Leithauser of Detroit, was well rewarded for his meticulousness; the most handsome man, Dr. John Pennington of Atlantic City, won the beauty award of the day.

ELECTION OF OFFICERS

Dr. M. M. Cullom of Nashville, Tenn., was chosen president of the A. M. G. A. for the ensuing year. Dr. W. Albert Cook of Tulsa, Okla., was elected first vice president; Dr. Walt P. Conaway, Atlantic City, N. J., second vice president. Dr. Lukens was made a member of the board of directors, composed of past presidents. The next tournament will be held in Kansas City at the time of the annual meeting.

MEDICAL BROADCASTS

Network programs broadcast weekly over the National Broadcasting Company and the Columbia Broadcasting System have been discontinued for the summer. Notice of resumption will be published several weeks prior to the first of the new series of programs. It is probable that the radio broadcasts will be resumed about October 1.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Bill Introduced.—H. 655 proposes to repeal the laws regulating the possession, sale or distribution of narcotic drugs and to enact what apparently is the uniform narcotic drug act.

CALIFORNIA

Assign Additional Inspectors to Spider Problem.—Fourteen new health inspectors were assigned to the Belvedere Gardens district of Los Angeles, June 19, to clean out the venomous black widow spider, which has infested the area. According to the Chicago *Tribune*, prevalence of the insect has been reported in other local areas.

DISTRICT OF COLUMBIA

Medical Bills in Congress.—*Bill Introduced:* S. 3084, introduced by Senator Copeland, proposes to make it unlawful in the District of Columbia for any physician, dentist or veterinarian to compound, manufacture or dispense any chemical, drug or medicine, for use as a medicine, even for his own patient, unless he has been licensed by the board of pharmacy as a medical "dispenser," dental "dispenser" or veterinary "dispenser." Physicians, dentists and veterinarians who are eligible to practice their respective professions in the District of Columbia when the bill becomes effective and who have been accustomed to compound, manufacture and dispense drugs and medicines for use by their own patients may be licensed by the board of pharmacy without examination. The qualifications of all other physicians, dentists and veterinarians are to be determined by the board of pharmacy, consisting of five pharmacists. A physician, dentist or veterinarian must pay to the board of pharmacy at the time of

examination a fee of $10. Every physician, dentist and veterinarian who is licensed, whether with or without examination, must pay the board a fee of $3 when he is licensed and a like fee every three years thereafter. The board of pharmacy is to be authorized to suspend or revoke the license of any medical, dental or veterinary "dispenser" for causes stated in the act.

The bill contains provisions intended to regulate the sale of poisons, including barbital and derivatives of barbituric acid. It proposes that no medicine of any kind shall be compounded, manufactured or dispensed, or sold or distributed at retail, by any person other than a registered pharmacist, except that medical, dental and veterinary "dispensers" licensed by the board of pharmacy are to be permitted to compound, manufacture and dispense drugs for the sole use of their respective patients.

The board of pharmacy, if this bill be enacted, is to take over the duties of the health department and the police department in the enforcement of laws enacted for the District of Columbia and pertaining to the practice of pharmacy, the manufacture, production, sale, distribution and standard of strength and purity of drugs, chemicals and poisons. Since this bill proposes to reenact provisions of the present law relating to the treatment of persons addicted to the use of cocaine, morphine, opium and chloral hydrate, the bill proposes in effect that the board of pharmacy shall have supervision and control of the treatment of such addicts.

GEORGIA

New Headquarters for State Association.—The Medical Association of Georgia moved, June 5, to new headquarters in the Atlanta Academy of Medicine and Dentistry. Until that time the association had held council meetings in the academy building.

Dr. Bunce Honored.—Dr. Allen H. Bunce, Atlanta, who has been secretary of his state association since 1920, was presented with a gold watch by the Medical Association of Georgia in recognition of his many years of service. Dr. William R. Dancy, Savannah, made the presentation on behalf of members of the association at a banquet of the Fulton County Medical Society. Dr. Bunce has also been a member of the Board of Trustees of the American Medical Association for six years.

Society News.—Speakers before the Eighth District Medical Society, April 9, included Drs. Millard E. Winchester, Brunswick, on "Use of Atabrine in Control of Malaria," and Marvin F. Haygood, Atlanta, "Place of Surgery in the Treatment of Pulmonary Disease."——Dr. Quinney A. Mulkey, Millen, read a paper on "Relationship of the Doctors and Druggists" before the Burke-Jenkins-Screven Counties Medical Society at Millen, April 4.——Dr. Cleveland Thompson, Millen, among others, addressed the Tattnall County Medical Society in Reidsville, April 12, on "Peritonitis."——At a meeting of the Muscogee County Medical Society, April 11, Dr. James H. McDuffie Jr., Columbus, discussed fibroids complicating pregnancy.——Dr. Cyrus W. Strickler presented a paper before the Fulton County Medical Society in Atlanta, April 4, entitled "Forced Spinal Drainage in Epidemic Encephalitis."——At a meeting of the Atlanta Academy of Medicine, June 20, Dr. Edgar Boling presented a paper on "Treatment of Septic Peritonitis."

ILLINOIS

Bill Introduced.—S. 659, to amend the workmen's compensation act, proposes to make compensable occupational diseases arising out of any employment covered by the act.

Bill Passed.—H. 814 has passed the house, proposing to authorize the formation of corporations to operate nonprofit hospital service plans "whereby hospital service may be provided by the said corporation or hospital with which it has a contract for such care . . . to those persons who become subscribers to said plan under a contract which entitles each subscriber to certain hospital care."

Society News.—Dr. Philip Lewin, Chicago, discussed arthritis before the Fulton County Medical Society, June 20.——At a meeting of the McHenry County Medical Society, June 20, Dr. George de Tarnowsky, Chicago, spoke on the treatment of fractures.——Dr. Leon Unger, Chicago, spoke on "Allergy, with Special Reference to Recent Advances in Hay Fever," before the Du Page County Medical Society, May 15.

Chicago

Hospital News.—The tenth anniversary of the Illinois Educational and Research Hospital, operated jointly by the state department of public welfare and the University of Illinois College of Medicine, was observed, June 6; the program included the unveiling of a fountain statue symbolizing the fight by science and medicine to protect humanity from disease. A. L. Bowen, Springfield, director, state department of public welfare, made the principal address.

Society News.—Dr. Irving F. Stein's presidential address before the Chicago Gynecological Society, June 7, was entitled "A Consideration of the Phenomenon of Ovulation and Its Relation to the Sex Cycle"; Luther S. H. Gable, Ph.D., discussed "Adventure with Radium."——Dr. Thomas P. Foley was chosen president-elect of the Chicago Medical Society at its annual meeting, June 19, and Dr. Julius H. Hess was installed as president. Dr. Robert H. Hayes was named secretary.

INDIANA

Society News.—The Third District Medical Society held its semiannual meeting in Corydon, May 10, to observe the founding of the Indiana State Medical Association one hundred and fifteen years ago. Speakers included Drs. Charles Emery, Bedford, on burns; Donald L. Colglazier, Salem, hematology in general practice; James O. Ritchey, Indianapolis, pulmonary complications of influenza.——The Daviess-Martin Counties Medical Society was addressed, May 28, by Dr. Homer H. Wheeler, Indianapolis, on "Carcinoma of the Rectum."——At a meeting of the St. Joseph County Medical Society in South Bend, May 8, Dr. James H. Stygall, Indianapolis, discussed "Differential Diagnosis of Chest Conditions." The society held its annual "doctors' party," May 22.——Dr. Edward B. Ruschli, Lafayette, spoke on fracture of the hip joint before the Fountain-Warren Counties Medical Society in Covington, June 6.——The Jefferson County Medical Society was addressed in Madison, May 27, by Dr. John M. Townsend, Louisville, Ky., on the "Irritable Female Bladder and Urethra." Dr. Adolph B. Loveman, Louisville, discussed diagnosis and treatment of the commoner skin conditions.——Dr. Paul D. Crimm, Evansville, was elected president of the Indiana Tuberculosis Association at its annual meeting in Indianapolis, April 16-17.

IOWA

A Death from Smallpox.—The state health department reports the death of a middle aged man from smallpox during the week ended June 15. The man lived in a rural area in Warren County and had never been successfully vaccinated against smallpox.

Typhoid During 1934.—There were 285 cases of typhoid reported to the state department of health in 1934, with fifty-four deaths. Six typhoid carriers were discovered in the investigations. Excluding cases associated with milk-borne outbreaks, which occurred at Waterloo, Boone and Fontanelle during the year, there were 141 cases representing what is often designated "residual" or endemic typhoid, the state journal reports.

Society News.—Dr. Tobias L. Birnberg, St. Paul, discussed "Eczema in Children" before the Cerro Gordo County Medical Society in Mason City, April 9.——At a meeting of the Cherokee County Medical Society, April 16, Dr. Lester J. Spinharney, Cherokee, spoke on hydramnios.——A symposium on obstetrics was presented before the Harrison County Medical Society in Missouri Valley, April 3, by Drs. Roy H. Cutler, Little Sioux, and Charles S. Kennedy, Logan.

KANSAS

Society News.—Dr. Francis S. Carey, Kansas City, presented a paper on "Common Complications Following Abdominal Operations and Their Treatment," at a recent meeting of the Wyandotte County Medical Society.

State Practically Free from Bovine Tuberculosis.—The U. S. Department of Agriculture officially recognized Kansas as the nineteenth state practically free from bovine tuberculosis, May 1, thus establishing it as a modified accredited area, where tuberculosis among cattle has been reduced to less than 0.5 per cent. Other states are North Carolina, Maine, Michigan, Indiana, Wisconsin, Ohio, Idaho, North Dakota, Nevada, New Hampshire, Utah, Kentucky, West Virginia, Washington, Illinois, Oregon, Virginia and Minnesota. The campaign to eradicate bovine tuberculosis is progressing rapidly in other states. During March, 2,690,074 cattle in about 250,000 herds were tested, more than in any previous month in the history of the work.

MAINE

Society News.—At a meeting of the Kennebec County Medical Association in Togus, May 16, speakers included Drs. Edward G. Ahrens, "Recent Advances in the Treatment of Asthma"; Hanson T. Perkins, "Rôle of Electrocardiography in Modern Medicine"; James K. Nealon, "Treatment of Pyelonephritis"; Joseph E. Wheeler, "Treatment of Ununited Fractures of Long Bones," and Harry A. Goalwin, "Reconstructive

Surgery of the Eyelids and Lacrimal Passages."——Dr. Seth M. Milliken, New York, discussed "Traction in the Treatment of Fractures" before the Cumberland County Medical Society, April 25.

MARYLAND

Resolution on Certified Milk.—The following resolution was adopted, May 17, by the Medical Milk Commission of the Medical and Chirurgical Faculty of Maryland:

That the requirements for the production of certified milk under the Medical Milk Commission of Maryland shall include the regulations governing the production and handling of selected raw milk required by the Baltimore City Health Department in addition to such regulations as are found in the methods and standards for the production of certified milk adopted by the American Association of Medical Milk Commissions or as established by the Maryland Medical Milk Commission.

This action refers to the regulations governing the production and handling of selected raw milk adopted by the commissioner of health of Baltimore recently and assures a single standard of sanitary requirement for the certified milk on sale in Baltimore.

Appeal for Funds Successful.—Two years of charity work at Johns Hopkins Hospital, Baltimore, have been assured as a result of its recent appeal for funds, the first in many years. The campaign opened at a banquet, April 23. Recent reports state that the goal of $200,000 has been exceeded by $26,241. The institution provides 36 per cent of all local charity hospitalization, it was stated. Funds obtained in the recent campaign will enable the hospital to continue this work for two years and to open beds now closed in the children's surgical ward and the women's clinic. The success of the campaign and the forty-sixth anniversary of the opening of the hospital were observed at a luncheon, May 9, at which Dr. Simon Flexner, New York, director of laboratories of the Rockefeller Institute for Medical Research, was the principal speaker.

MICHIGAN

Dr. MacCraken Resigns as Dean.—The resignation of Dr. Walter H. MacCraken as dean of Wayne University College of Medicine on account of ill health has been announced. He has held the position concurrently with his appointment as professor and head of the department of pharmacology and therapeutics since 1919. He will continue with the latter position. Aged 65, Dr. MacCraken is a graduate of the University of Louisville School of Medicine, class of 1903. Dr. William J. Stapleton Jr., Detroit, has been named assistant dean, it was stated. Wayne University College of Medicine was formerly known as Detroit College of Medicine.

A Medical Symphony Orchestra.—The Wayne County Medical Society Symphony Orchestra will present its concerts next season at the Scottish Rite Cathedral of the Masonic Hall and the Art Institute. The orchestra has been rehearsing weekly, under the direction of Mr. Georges Miquelle. The personnel of the orchestra is:

Violins: Drs. Raphael Altman, concert master; Jacob Agins, John D. Bryce, Charles R. Davis, Henry C. Galantowicz, Samuel D. Jacobson, Ezra Lipkin, D. Annessa Marcilli, Leon Rottenberg and Stephen S. Skrzycki.
Viola: Max Beitman.
Cello: Drs. Eugene A. Osius and William P. Woodworth.
Piano: Dr. Frank M. MacKenzie.
Saxophone: Dr. Edward W. Krass and Gerald Wilson Jr.
Clarinet: Drs. George C. Burr and Roy D. Tupper.
Trumpet: Drs. Arthur E. Hammond and Gerald A. Wilson, Paul Walker and Miss Phyllis Hyde.
Flute: Dr. George H. Palmerlee.
Trombone: Dr. Fred W. Hyde and Fred Hyde Jr.
Percussionist: Harold C. Kahn, D.D.S.

The society's glee club is made up of Mr. Arthur H. J. Searle, director; first tenors, Drs. Lloyd E. Crick, Edwin J. Hammer and Rudolph W. Lignell; second tenors, Drs. Agins, Laslo Galdonyi and Douglas A. Jackson; baritones, Drs. John N. Salowich, Leo P. Rennell and Harry A. Pearse; basses, Carleton Fox, D.D.S., and Drs. Paul G. Brownell, Francis T. McCormick and Frank M. MacKenzie. Dr. MacKenzie is president of the orchestra; Dr. Woodworth, vice president; Dr. Agins, secretary, and Dr. Arthur E. Hammond, treasurer.

MINNESOTA

Fifty Years of Practice.—The Hennepin County Medical Society sponsored a dinner in honor of several of its members who have completed fifty years in the practice of medicine. The guests of honor were Drs. Thomas S. Roberts, Edward Josiah Brown, Thomas F. Quinby, Jesse E. Long, Richard Olding Beard, Horatio B. Sweetser Sr., Ethelbert O. Cosman, Henry L. Staples, John Phineas Barber, Henry Hooker Leavitt and Ralph St. John Perry. Dr. William B. Linton and Dr. Brown, a past president of the society, were unable to attend.

Seventy-Fifth Anniversary Celebrated.—The seventy-fifth anniversary of the first medical organization in Ramsey County was observed with a stag dinner at the Minnesota Club, St. Paul, May 18. According to *Minnesota Medicine*, the establishment of the St. Paul Academy of Medicine and Surgery, March 1, 1860, was the first attempt of the local profession to organize. Dues of $25 were paid and the salary of the city physician, whose duties were performed one month each year by every member of the academy, was turned over to the society. A lot was purchased, a library started and a microscope procured. During the Civil War, however, with many of its members in service, the academy languished until in 1866 it was disbanded. With its reorganization, Feb. 14, 1870, as the Ramsey County Medical Society, it became a component of the Minnesota State Medical Association.

MISSISSIPPI

Dr. Mull Resigns as Dean.—Dr. Philip L. Mull, since 1930 dean of the University of Mississippi School of Medicine, University, has resigned, effective June 1. Dr. Billy S. Guyton, adjunct professor of minor surgery, has been named acting dean, and Dr. James R. Simms Jr., assistant professor of bacteriology, pathology and clinical diagnosis, assistant to the dean. Dr. Mull will continue as professor and head of the department of anatomy, a position he has held for many years.

NEBRASKA

State Medical Election.—Dr. George W. Covey, Lincoln, was chosen president-elect of the Nebraska State Medical Association at the annual meeting in Omaha, May 14-16. Drs. William P. Wherry, Omaha, and John D. Reid, Pilger, were elected vice presidents and Dr. Claude A. Selby, North Platte, was installed as president.

NEW JERSEY

Honorary Membership in State Society.—Three physicians were made honorary members of the Medical Society of New Jersey at the annual meeting in Atlantic City, May 2. They were Drs. Wells P. Eagleton, Newark; Vanderhoef M. Disbrow, Lakewood, and Philip Marvel, Atlantic City, all of whom were cited for long and distinguished service.

Health at Camden.—Telegraphic reports to the U. S. Department of Commerce from eighty-six cities with a total population of 37 million, for the week ended June 15, indicate that the highest mortality rate (18.3) appears for Camden and the rate for the group of cities as a whole, 10.6. The mortality rate was 12.7 for Camden for the corresponding week last year and was 10.3 for the group of cities. The annual rate for eighty-six cities for the twenty-four weeks of 1935 was 12.3, as against a rate of 12.2 for the corresponding period of 1934. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may increase the death rate.

NEW YORK

Personal.—The University of California conferred the honorary degree of doctor of laws on Dr. George H. Whipple, dean and professor of pathology, University of Rochester School of Medicine, at its commencement exercises, May 18.

New York City

Lectures on Compensation Laws.—The workmen's compensation board of the Medical Society of the County of New York sponsored a group of lectures, the second in a series, at the New York Academy of Medicine, June 19. Speakers were Dr. Raphael Lewy, chief medical examiner, state department of labor, on "Aggravation, Activation and Acceleration of Pre-existing Disease in Its Relation to Trauma"; Dr. George N. Edson, Flushing, "Medicolegal Aspects of the Workmen's Compensation Law," and Michael Murphy, acting director of the workmen's compensation division of the state department of labor, "Administration of the New Law and the Department of Labor."

Survey of Hospital Needs.—The United Hospital Fund is sponsoring a survey to determine the hospital needs of the New York metropolitan area until 1965. The Carnegie Corporation of New York has made a grant of $40,000 to finance the study, which is to be completed in the fall of 1936. Five hundred and seventy institutions giving organized care for the sick, including 357 hospitals, will be studied with relation to the needs and facilities for care of the sick through institutions and agencies.

The area to be included in the study consists of the counties of Hudson, Union and Essex and parts of Bergen and Passaic in New Jersey, the counties of Westchester and Nassau, New York, the towns of Stamford and Greenwich, Conn., as well as the five boroughs of the city of New York. The population in this area is now about 10,250,000 and is expected to amount to 18,000,000 in 1965. The study committee in direct charge of the survey includes Drs. Sigismund S. Goldwater, Charles Gordon Heyd, John E. Jennings, Eugene H. Pool, Willard C. Rappleye and Nathan B. Van Etten. George E. Vincent, Ph.D., Greenwich, Conn., former president of the Rockefeller Foundation, is chairman of the survey; David H. McAlpin Pyle, president of the United Hospital Fund, vice chairman, and Dr. Haven Emerson, director of study.

NORTH CAROLINA

Outbreak of Infantile Paralysis.—State and local authorities have canceled numerous gatherings scheduled for July in an effort to prevent the spread of infantile paralysis, which has attacked 127 persons in the state since June 1, according to the New York *Times*, June 23.

Society News.—Dr. Burton W. Fassett, Durham, was elected president of the North Carolina Eye, Ear, Nose and Throat Society, which was organized at a meeting in Pinehurst in May. Dr. James M. Lilly, Fayetteville, is vice president, and Dr. Casper W. Jennings, Greensboro, secretary. The first annual meeting will be held in Greensboro in October.

PENNSYLVANIA

Hospital News.—The Bryn Mawr Hospital, Bryn Mawr, has opened a department for the treatment of selected cases of nervous disorders.

Society News.—Speakers before the Cambria County Medical Society in Johnstown, June 6, were Drs. Oliver H. P. Pepper and Isidor S. Ravdin, Philadelphia; they discussed "Growing Appreciation of the Importance of Hypotension" and "Recent Advances in Postoperative Treatment," respectively, and held clinics in the afternoon.

Bill Introduced.—S. 1627 proposes to authorize the governor to appoint a commission, to be composed of five chiropractors, a member of the senate and a member of the house, to examine and license persons to practice chiropractic. The commission is to report to the general assembly in 1937 a draft of legislation for the regulation of the practice of chiropractic.

Philadelphia

Commencement at Jefferson.—Homer P. Rainey, Ph.D., president of Bucknell University, Lewisburg, delivered the valedictory address at Jefferson Medical College, June 7, to a graduating class of 142. His subject was "Relations of General and Medical Training." Clinics for Alumni Day and Ex-Interns' Day were held in Jefferson Hospital, June 5-6, and the annual alumni banquet was held at the Bellevue-Stratford, June 6, with Dr. John B. Lowman, Johnstown, Pa., president of the alumni association, presiding. The graduating class of 1935 presented to the college a portrait of the late Dr. Thomas Cook Stellwagen.

Personal.—Dr. Edward Martin, Media, emeritus professor of surgical physiology, University of Pennsylvania School of Medicine, received the honorary degree of doctor of laws at the annual commencement at Temple University, June 13.——The honorary degree of doctor of laws was conferred on Dr. Ross V. Patterson, dean, and Sutherland M. Prevost, professor of therapeutics, Jefferson Medical College, at the annual commencement of Ursinus College, Collegeville.——Dr. Solomon Solis Cohen, emeritus professor of clinical medicine, Jefferson Medical College, received the fifth annual Keneseth Israel Alumni Award, May 27.——Dr. Charles R. Turner, dean of the University of Pennsylvania School of Dentistry, received the honorary degree of doctor of science at the annual commencement of the Medical College of Virginia, May 26. Dr. Turner is an alumnus of the school.

Pittsburgh

Prizes for Interns' Case Reports.—Dr. John Leo Gedgoud, intern at St. Margaret Memorial Hospital, won first prize in the annual case report contest conducted by the Allegheny County Medical Society with a paper on "Scorbutus in Pittsburgh, An Accident." Dr. Harry Fisher, Allegheny General Hospital, won second prize with a report on "Paraplegic Tetanus Involving Both Lower Extremities." The papers were presented at a meeting of the society, May 21, at which Dr. Francis F. Borzell, Philadelphia, gave an address entitled "What Does the Future Hold for the Medical Graduate?" and Dr. Bertram J. Miles, "A Study of Equilibrium of the Deaf."

TEXAS

Dr. Carter Again Dean of Medical School.—Dr. William Spencer Carter, New York, who was dean of the University of Texas School of Medicine, Galveston, from 1903 to 1923, has again been appointed dean to succeed the late Dr. George E. Bethel. Dr. Carter, born in New Jersey in 1869, was graduated from the University of Pennsylvania School of Medicine in 1890. He went to Texas in 1897 as professor of physiology; in 1903 he was made dean, retaining his professorship until his resignation in 1923, when he became associate director of the division of medical sciences of the Rockefeller Foundation.

WASHINGTON

Personal.—Dr. Wallace D. Hunt, Seattle, has been appointed health officer of King County, succeeding Dr. Charles L. Dixon, Renton, June 1.

Society News.—Drs. Frederick A. Slyfield, Seattle, and Ross E. McPhail, Lakeview, addressed the Grays Harbor Medical Society, Elma, May 15, on the diagnosis and treatment, respectively, of tuberculosis.

In Memory of a Pioneer Physician.—Whitman College, Walla Walla, is sponsoring a plan to celebrate in 1936 the one hundredth anniversary of the arrival of Dr. Marcus Whitman in the Northwest and the founding of the first American home in old Oregon Territory by him and his wife, Narcissa Prentiss Whitman. A four-day program is contemplated, with one day devoted to the medical profession and to consideration of Dr. Whitman's work as physician and surgeon.

WISCONSIN

Dr. Middleton Succeeds Dr. Bardeen as Dean.—Dr. William S. Middleton, professor of medicine, University of Wisconsin School of Medicine, was named dean of the school by the board of regents, June 21, to succeed Dr. Charles R. Bardeen, who died June 12. A native of Pennsylvania, Dr. Middleton was graduated from the University of Pennsylvania School of Medicine in 1911. He came to the University of Wisconsin in 1912 as a member of the department of student health and has been a member of the faculty since that time except for service during the World War. In 1933 Dr. Middleton was president of the Central Society for Clinical Research and this year became president of the American Association of the History of Medicine at its annual meeting, May 6.

GENERAL

Officers of the Woman's Auxiliary.—Mrs. Robert Fitzgerald, Milwaukee, was named president-elect of the Woman's Auxiliary to the American Medical Association at the annual session in Atlantic City, and Mrs. Rogers N. Herbert, Nashville, was installed as president. Vice presidents elected are Mrs. John Bonar White, Atlanta; Mrs. Otis Floyd Lamson, Seattle; Mrs. Elmer L. Whitney, Detroit, and Mrs. Prentiss Willson, Washington, D. C. Mrs. Charles C. Tomlinson, Omaha, is recording secretary; Mrs. Lawrence J. Jones, Wilmington, Del., corresponding secretary, and Mrs. Eben J. Carey, Milwaukee, treasurer.

Medical Bills in Congress.—*Bill Introduced:* H. R. 8528, introduced by Representative Rankin, Mississippi, proposes to provide domiciliary care and medical and hospital treatment to veterans of the World War and the Spanish-American War and to former members of the Army, Navy, Marine Corps or Coast Guard, who receive compensation or pensions for service-connected disabilities. *Changes in Status:* H. R. 6995, proposing that all laws in effect on March 19, 1933, granting pensions to veterans of the Spanish-American War, including the Boxer Rebellion and the Philippine Insurrection, their widows and dependents, be reenacted into law, has been favorably reported to the House. H. R. 7260, the so-called social security bill, has passed the Senate in amended form.

Society News.—The fifth annual convention of the Biological Photographic Association will be held at the Stevens Hotel, Chicago, September 12-14. Information may be had from Ralph P. Creer, chairman of the program committee, Box 266, Hines, Ill.——Dr. Eugene H. Pool, New York, was elected president of the American Surgical Association at the annual meeting in Boston, June 8. The association will meet in Chicago in 1936.——Dr. Albert M. Barrett, Ann Arbor, Mich., was elected president of the American Neurological Association at its annual meeting in Montreal, Canada, June 4. Drs. Howard C. Naffziger, San Francisco, and John Favill, Chicago, were made vice presidents.——Dr. Milton J. Rosenau, Boston, was elected president of the American Association of Medical Milk Commissions at the annual meeting in Atlantic City, June 10-11.

——Dr. Catharine MacFarlane, Philadelphia, was chosen president-elect of the Medical Women's National Association at the annual session in Atlantic City, June 10, and Dr. Sara Josephine Baker, Stamford, Conn., was installed as president.

Health Projects Aided by Relief Labor.—Health and sanitation projects were cited as one of the major contributions of relief labor in a recent summary by Harry L. Hopkins, federal emergency relief administrator. Reviewing the work in forty-six states, he pointed out that 553 hospitals have been built and 218 improved or extended. In addition, the following projects were listed: miles of sewers constructed, 2,259, improved 46; miles of water mains constructed, 1,594, improved 70; reservoirs built, 529, improved and cleaned, 218; mosquito-breeding swamps drained, 3,277,150 acres, requiring 28,363 miles of drainage ditches and affecting more than 34,000,000 persons; sewage-disposal plants built, 448, improved, 167; garbage disposal plants built, 45, improved, eight; sanitary privies built, 245,121, improved, 24,087; filter plants built, 15; septic tanks installed, 2,466. These figures are exclusive of work done under the civil works program and do not include the extensive sanitation projects carried on in Puerto Rico and many projects in progress in the United States and not yet reported which would appreciably increase the totals.

Government Services

Positions Open in Civilian Conservation Corps

Eight hundred physicians will be added to the Civilian Conservation Corps under an expansion program, which will increase the corps to 600,000 members, it is announced. At present there are 1,600 physicians in 1,625 camps and military hospitals throughout the country. It is planned to increase the number of camps to 2,917 by August 1. The operation of the camps and the enrolment of physicians are in charge of the various corps area commanders. General medical supervision is under the direction of Major Gen. Charles R. Reynolds, surgeon general of the army. It is the policy of the war department to select physicians for service with the Civilian Conservation Corps who are members of the medical reserve corps, but in some communities part time contract physicians will be employed who may not be members of the reserve corps. Medical department reserve officers training corps units at medical schools throughout the county are being discontinued this month by an act of Congress, which prohibits further expenditure of appropriated funds for their support. Heretofore these units have been the principal agencies through which young physicians have sought commissions in the medical reserve corps of the army. Because of the considerable number of physicians required to provide the medical service for the increased Civilian Conservation Corps, the war department through recent instructions has authorized corps area commanders to accept graduates of class A medical colleges of the 1935 class for enrolment in the medical reserve corps. It is planned to order to active duty several hundred members of the medical reserve corps who desire service with the Civilian Conservation Corps. Recent graduates of class A schools are authorized, under certain conditions, to participate in this active duty. Care will be taken not to employ interns before completion of their hospital service. Qualified physicians who desire to enter the medical service of the Civilian Conservation Corps should make application in writing to the commanding general of the corps area in which they reside.

The following is a list of the corps areas, the states included therein and the postoffice address of the headquarters:

First Corps Area: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut. Headquarters, Army Base, Boston 9, Mass.

Second Corps Area: New Jersey, Delaware and New York. Headquarters, Governor's Island, N. Y.

Third Corps Area: Pennsylvania, Maryland, Virginia and the District of Columbia. Headquarters, 311 St. Paul Place, Baltimore, Md.

Fourth Corps Area: North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee, Mississippi and Louisiana. Headquarters, Fort McPherson, Ga. Mail address, Oakland City Station, Atlanta, Ga.

Fifth Corps Area: Ohio, West Virginia, Indiana and Kentucky. Headquarters, Fort Hayes, Columbus, Ohio.

Sixth Corps Area: Illinois, Michigan and Wisconsin. Headquarters, 1819 West Pershing Road, Chicago, Ill.

Seventh Corps Area: Missouri, Kansas, South Dakota, Arkansas, Iowa, Nebraska, Minnesota and North Dakota. Headquarters, Baird Building, Omaha, Neb.

Eighth Corps Area: Texas, Oklahoma, Colorado and New Mexico. Headquarters, Fort Sam Houston, San Antonio, Texas.

Ninth Corps Area: Washington, Oregon, Idaho, Montana, Wyoming, Utah, Nevada, California and Alaska. Headquarters, Presidio of San Francisco, Calif.

Foreign Letters

LONDON LETTER

(From Our Regular Correspondent)

June 1, 1935.

The British Graduate Medical School

The opening of the new British Postgraduate Medical School by the king was described in a previous letter. For the first time graduate teaching is centralized in this country in a suitable hospital, staffed in every way necessary for the purpose. The hope has been expressed that London may become the world's principal center for graduate teaching. The position of certain continental countries that enjoyed a world reputation both as centers of research and of teaching has been damaged by the World War and still more by the destruction of liberty and the persecution of scientists which followed that catastrophe. Instruction in clinical medicine is provided by appointments to the wards of graduate students as clinical clerks for periods of three or more months. Intensive courses for physicians, lasting two weeks, will be given frequently. In these a disease or group of diseases will be demonstrated in their various aspects—clinical, pathologic, radiologic. It is also proposed to arrange a series of lectures and demonstrations one day in the week for London physicians. Graduates engaged in investigation who require clinical material can be accommodated in small numbers. Visitors for short periods will be welcomed and arrangements made for them to see whatever work they desire. Visitors from abroad who wish to follow intensive studies or to learn English methods will find their needs supplied.

The teaching is organized in four departments—medicine, surgery, obstetrics and gynecology, and pathology. These are each directed by fulltime professors who are well known teachers, and they are assisted by a staff, many of whom specialize in subordinate subjects. Eminent teachers in other medical schools will also visit the hospital at regular intervals as consultants and at other times when required. It is also hoped that the services of distinguished visitors to London from the country or from abroad may be obtained, and that they will take charge of wards for a time and engage in the routine work of the school. The organization is in some ways comparable to the teaching "units" recently formed in the medical schools, but for graduate teaching nothing comparable to it has existed before in this country.

The Chatter of Food Faddists

Addressing the annual conference of the Scottish National Health Visitors Association, Prof. E. P. Cathcart, F.R.S., the well known dietitian, said that all the chatter about food which they hear today had a bad effect in making sensitive people become food conscious and then food faddists, food fanatics, and finally missionaries. Much nonsense was talked about calories; calories were only a unit of heat. There was no hidden value in them. Emphasizing the importance of an adequate amount of proteins, carbohydrates and fats in the diet, Professor Cathcart said that as regards fat they would find a direct relation between its consumption and economic status. The more money available, the greater the amount of fat consumed, and at no time in the history of the human race was so much fat consumed as now. The increase had taken place largely in the last thirty years. Tuberculosis was one of the few diseases that responded to improved nutrition. He was certain that there was much malnutrition among widows and unmarried daughters and men who had once been in comfortable circumstances and were now eking out a meager existence on a minute income without saying a word. As shown in previous

letters, misleading political propaganda has been used to suggest that there is prevalent malnutrition due to insufficiency of the dole for unemployment. It is noteworthy that Professor Cathcart's example of malnutrition is, on the contrary, in the class that is taxed highly to finance the dole and other social services.

Psychoneurosis as a Cause of Incapacity Among Insured Persons

A regional medical officer of the department of health for Scotland, Dr. J. L. Halliday, has published in the *British Medical Journal* the results of an inquiry into 1,000 consecutive records of insured persons (excluding pregnant and puerperal women) certified as unfit for work, with a view to determining the proportion incapacitated by psychoneurotic disorders. He found that this amounted roughly to a third (36 per cent in the case of women and 31.7 in men). There was a slightly higher incidence of psychoneurosis among the unemployed than the employed, which increased with the duration of the unemployment. Thus the percentage incidence among those who had been unemployed for less than three months was 25.7, less than the incidence (32) among those who became incapacitated during employment. But with lengthening of unemployment the incidence increased to reach a maximum of 41.5 per cent in the period six to twelve months. There appears to be a short period of a sense of release and holiday freedom, then gradually increasing anxiety with loss of mental equilibrium and finally, after several years, adaptation takes place to a new and debased level of life.

In an exhaustive survey of the effects of unemployment Sir George Newman, chief medical officer of the ministry of health, stated that there is no medical evidence of any general increase in physical impairment, in sickness, or in mortality as a result of economic depression or unemployment. It would thus seem that unemployment influences the mind rather than the body.

The Manufacture of Synthetic Drugs

Before the war practically all the synthetic drugs used in Great Britain came from Germany. Since that catastrophe we no longer depend on that country to the same extent for the manufacture of drugs or dyes. In the report of the Chemistry Research Board, just issued by the department of industrial and scientific research, the first complete survey of the work carried out in the chemical research laboratory during the ten years of its existence is described. Several firms have made arrangements for members of their staffs to be attached to the laboratory in order to learn the new methods of technic developed there. The board has arranged for the preparation of synthetic chemicals of the types likely to be useful in the treatment of disease, and, by cooperation with the Medical Research Council, to have them tested for chemotherapeutic effects. This arrangement covers not only chemicals that are produced in the chemical research laboratory but also those produced by workers in universities who are assisting in this branch of the work. Although this work has a medical objective, it is a joint field in which the chemist can render valuable aid, as, apart from the alleviation of suffering, the production in this country of synthetic drugs has an important industrial and imperial significance.

Graduate Courses for Ship Surgeons

The Seamen's Hospital Society of Greenwich has, at the instigation of the British Medical Association, placed its resources connected with the London School of Clinical Medicine and the London School of Hygiene and Tropical Medicine at the disposal of ship surgeons for graduate work. The society controls the Seamen's Hospital of Greenwich, where courses for ship surgeons are held as follows: Part 1. Ships' hygiene. Part 2. Tropical medicine and hygiene. Part 3. Refresher courses in clinical subjects. Thus ship surgeons are able to study cases drawn from the very class with which their daily work is concerned. They are specially trained in the treatment of surgical emergencies, the treatment of fractures and the prevention of protracted disability, the expediting of movement in quarantine, the differential diagnosis of tropical disorders, the discrimination of spurious from genuine claims in respect to injury and dealing with the special problems of hygiene arising on board ship. Unfortunately, though ship surgeons are ready enough to take advantage of the facilities provided, the great shipping companies have not seen their way to support the scheme—doubtless owing to the financial stress of this industry. The pay of ship surgeons is not sufficient to allow them to undertake these courses entirely at their own expense.

PARIS

(From Our Regular Correspondent)

May 17, 1935.

Preoperative Radiography of Acute Intestinal Obstruction

This has been the subject of a general discussion at the Dec. 19, 1934 and Feb. 20, 1935, meetings of the Société de chirurgie of Paris. Moulonguet and Rousset first reported their experiences in seventeen cases in which plain roentgenography alone was employed to confirm the diagnosis and to localize the seat of the acute obstruction. The ingestion of an opaque medium is strongly contraindicated in these cases. The best films were obtained in the upright position. A marked collection of gas in the colon indicated obstruction in this portion of the alimentary tract. Normally there is no gas to be seen in plain films of the small intestine, so its presence is pathognomonic of obstruction there. Such manifestations are not seen in reflex ileus accompanying biliary or renal colics. Often the roentgenographic evidence is to be elicited at an earlier period of the obstruction than are the clinical signs. One cannot distinguish between a septic ileus due to peritonitis and one due to mechanical causes. In the latter form, localization of the exact level at which the obstruction has occurred is difficult on plain films. Generally, the point at which the gas is absent corresponds to the level of the obstruction. As to the nature of the obstruction in acute ileus, the only form that can be diagnosed is that due to an impacted gallstone. Roentgenography before operations for acute ileus of the large intestine is of much use in determining the level at which a colostomy should be made.

Mondor and Duval did not share the enthusiasm of Moulonguet. Mondor emphasized that the short time required to make a preoperative roentgen examination was amply rewarded by the rapidity with which one could operate, if the level of the obstruction was known. He prefers the opaque enema to dependence on plain films. If barium is used, only small amounts should be employed and much pressure must be avoided. The opaque enema enables a differential diagnosis to be made between a volvulus of the sigmoid and an obstruction due to a neoplasm of the colon. The interpretation of plain films is so difficult that Mondor has abandoned the method as a diagnostic aid in acute ileus.

Duval, Béclère and Porcher agreed with Mondor's criticism of plain roentgenography because gas may be present in variable amounts in the small intestine under normal conditions. They believe that roentgenography with an opaque enema is almost indispensable in acute ileus. One cannot distinguish a reflex ileus complicating biliary or renal colic from a mechanical obstruction on the plain film. In the absence of an opaque enema, one cannot tell whether the obstruction is in the large or the small intestine. Aside from ileus due to a gallstone or to stenosis of the colon, it is impossible to determine in adults, even with an opaque enema, the cause of an obstruction. One

ought to employ roentgenography (with opaque enema) as a routine measure in all cases of acute intestinal obstruction.

At the February 22 meeting, Professors Gosset and Ledoux-Lebard added their experiences to those of others reported at previous meetings of the society.

No contraindication to the use of the method exists, and the slight delay is well repaid by the abbreviation of the operative procedure. A plain film is taken as a preliminary measure to exclude obstruction by a gallstone. This is followed by a barium enema under fluoroscopic control.

Slides were shown of three cases in which the barium column attained only the level of the descending colon, thus greatly facilitating the determination of the level at which colostomy should be done. In a fourth case, the opaque enema stopped at the cecum, thus revealing the location of the obstruction before operation. In two other cases, the ileus followed appendectomy and the obstruction could be accurately located as being in the small intestine. In one of the last two cases, a child, aged 6 years, an intussusception could be readily excluded by the opaque preoperative enema.

Another interesting case of how preoperative roentgenography can aid the surgeon in the diagnosis of the seat of an acute obstruction was reported by Paris at the March 12 meeting. A man, aged 48, had an attack of diffuse acute abdominal pain followed by vomiting, four days before admission to the hospital. He had been in good health up to the onset of the present illness. A barium enema was given under fluoroscopic control and under low pressure. The entire colon was seen to be filled by the opaque enema so that a diagnosis of obstruction of the small intestine could be made.

The laparotomy, immediately after the roentgen examination, revealed a volvulus of a loop, about 50 cm. in length, of the small intestine. The volvulus accompanied a torsion of the omentum. The latter was resected and the volvulus reduced. Recovery followed.

Three final papers, one by Michel-Bechet, one by Fournier and Depreuil, and another by Moulonguet, who was the first to reawaken interest in the subject, seem to be the final ones in the discussion. Michel-Bechet has employed the method in twelve cases, two of which were of particular interest. In one case, plain films (without barium enema) revealed the presence of a sigmoid-shaped coil of small intestine near the stomach.

A diagnosis was made of obstruction and at the operation a coil of small intestine was found strangulated in the foramen of Winslow.

Fee-Splitting and the Income Tax Office

According to a law passed July 20, 1934, every physician is required to state, in his annual declaration of income from professional work, the amount paid to colleagues, if said sum is in excess of 1,000 francs (about $65). An interesting discussion of the new law by R. Massart appears in the March 17 *Concours médical*. Surgeons will be obliged to state how much was received for an operation and how this sum was distributed. The medical man who referred the patient to the surgeon will be obliged to state in his income tax schedule the sums received from the surgeon. Massart states that, as the result of this new law, the clandestine division of fees will disappear. Efforts have been made by various medical organizations to suppress the evil, but none will be as effective as the new law. According to the latter, whenever a physician or surgeon sends separate bills for services, or a joint bill in which the amount to be received by each one is stated, no special declaration of such amounts is necessary in the income tax schedule. On the other hand, if the surgeon receives the entire fee, the law requires that the names and amounts paid to each medical man who referred the respective patient must be stated. Otherwise the surgeon will be obliged to pay the income tax on the total amount received. A case is cited in which the tax office had knowledge of a relatively large sum paid as fees to a surgeon. In the latter's income tax schedule only half of the amount was declared as having been received. The internal revenue department immediately demanded payment on the entire amount paid to the surgeon, who in turn would be obliged to state to whom he had paid the other half so that the collector could proceed to collect taxes on these fees. Rather than disclose the names of the physicians who referred the patients and the amounts paid, the surgeon paid the tax on the original amount himself.

Such settlements will not be considered legal in the future, hence the new law will compel all members of the medical profession to state, in a special book open to inspection by the internal revenue collector, a detailed account of their receipts and expenditures.

Massart states that the medical profession is being subjected to what may appear to be an unjust persecution by the authorities, because the filing of income tax schedules was not regarded as seriously as it demanded by physicians in the past. The young practitioner is taxed relatively too high in comparison with the tax paid by older men. The latter are especially asked by Massart to be more exact in stating their incomes and expenditures. The law is in force and must be respected, lest still more objectionable requirements than keeping a daily account will be required. The new law will have more effect in checking the obnoxious and widespread evil of fee-splitting than all the threats of expulsion made by organized medicine.

BERLIN

(From Our Regular Correspondent)

April 22, 1935.

Psychopathic Patients and Race Hygiene

Prof. H. F. Hoffmann, psychiatrist of Giessen, recently pointed out that the peculiarities of psychopathic patients are in the main of hereditary origin. Of that fact research on twins has furnished unequivocal examples. There are cases known in which enzygotic twins reacted to external difficulties, independently of each other, with the same neurotic symptoms. There are also many instances in which the attitudes of psychopathic enzygotic twins toward life as a whole are identical or at least surprisingly similar. As a rule, psychopathic patients are the offspring of psychopathic parents—at least on one side, if not on both sides. In the event of psychoses in the ancestors, the inherited defects appear in certain cases to be more dominant than in the average person. Thus, schizoid psychopathic patients reveal striking evidence of hereditary influence, while cycloid and epileptoid psychopathic patients frequently show hereditary tendencies traceable to circular insanity or epilepsy. Of late, it has been asserted also that heredobiologic relations exist between psychopathy and neurologic disorders. If one divides the psychopathic patients into two groups according to their asocial and antisocial behavior, it will be observed that those who are abnormal socially show to no inconsiderable degree the hereditary influence of socially abnormal psychopathic persons and persons with criminal tendencies. There are as yet no comprehensive studies on the posterity of these two groups. But from the general impressions one gets it may be said that the abnormal psychopathic patients have, as a whole, an unsavory posterity. Importance is ascribed also to the fact that socially abnormal psychopathic persons usually mate with persons who are of an inferior type mentally, whereby the frequency and the degree of social degeneration in the offspring are, in many instances, greatly increased. Hoffmann has carried out extensive heredobiologic researches on these groups. Particularly dangerous for posterity is the type of unstable, undisciplined, irascible and brutal

psychopathic patient. Among their children one observes, in addition to psychopathy and criminality, grave types of imbecility, schizophrenia and epilepsy. According to these researches, race hygiene, from the social point of view, should emphasize more particularly in psychopathic patients the absence of social worth and antisocial influence.

Immunization Against Diphtheria

The increased incidence of diphtheria in certain regions of Germany is causing anxiety. Recently the federal bureau of health expressed its views on the question of diphtheria immunization. According to its conception, diphtheria immunization is still in the experimental stage, so that a final decision in regard to its value cannot be rendered as yet. However, the report states, the results secured in foreign countries and also in Germany are very encouraging and justify a continuation of the inoculations. A general introduction of diphtheria immunization is, on the other hand, inacceptable. For the present, its use should be confined to regions in which the morbidity and the mortality from diphtheria are particularly high. In regions in which general immunization is thus indicated, an endeavor should be made to include as many children as possible but without making protective inoculation compulsory. As far as can be ascertained, the inoculation is harmless, and the reactions are, for the most part, slight. In order to avoid any possible chance of untoward effects resulting from inoculations against diphtheria, children with acute or chronic diseases, particularly tuberculosis, should be exempted, for the time being. The duration of the immunization, which is considerable after from eight to ten weeks, and fully developed after about three months, is not yet known with certainty. The inoculation of children aged from 1 to 8 years may properly be accomplished with diphtheria anatoxin (toxoid); older children may better be given toxin-antitoxin vaccines, as they are more easily borne. The vaccine materials used in Germany are controlled by the central government. In collaboration with certain eminent pediatricians, the federal bureau of health has published a leaflet and also a pamphlet, containing detailed information on the subject of diphtheria immunization.

Fatigue, Sleep and Restoration

Prof. L. R. Müller, clinician of Erlangen, who, for many years, has made a special study of the biology and the clinical aspects of the central nervous system, recently called attention to the connections between fatigue, sleep and the restoration process in general. One must distinguish between sense of fatigue and the local sensations that, following severe bodily exertion, are noted in the joints, the tendon sheaths and the muscles, being due to the overwork demanded of these tissues. The sense of fatigue that induces one to quit work and seek sleep is not associated with local sensations but is due rather to the mental observation that the work is no longer progressing satisfactorily. In considering the general sense of fatigue, one must pass, therefore, from the neurologic to the psychologic aspect. Recent researches of the Zurich pharmacologist Cloetta and his co-workers have revealed that, with the stimulation of the neuromuscular apparatus, cations (chiefly calcium and potassium) pass from the nerves and from the muscles into the blood serum and that, as a result of sleep, a remigration of these cations into the neuromuscular substance occurs. Thus, for the first time, an attempt has been made to clarify the physical and chemical processes that lie at the basis of sleep and of stimulation of the muscles. There is no doubt that bodily fatigue cannot be completely overcome by rest or by the ingestion of food but only by sleep; sleep alone leads to a complete recovery or restoration.

Nearly all infectious diseases are associated at first with a marked feeling of weariness that makes rest in bed imperative; likewise, many disturbances of the internal secretions (Addison's disease, hyperthyreosis) and diseases of the blood. Fatigue in asthenic persons who are constantly worried about their health may be of mental origin. An attempt to control fatigue with caffeine involves a delay only in the onset of the fatigue; the fatigue is not actually overcome.

Mortality Among the New-Born

Prof. P. W. Siegel has published a statistical compilation on early mortality of the new-born in the East Prussian Landesfrauenklinik Insterburg. For purposes of comparison there were available the official statistics on the living births of East Prussia in 1931, the 4,458 living births of midwife practice, and finally the 4,446 living births in the aforementioned clinic. The statistics on early mortality for East Prussia (figured for the first fifteen days of life) revealed a mortality of 3.3 per cent; in midwife practice (including the operative obstetric interventions of the practitioners) of 3.4 per cent, and in clinical practice of 1.3 per cent. According to Siegel, it may be assumed that the other obstetric clinics secure the same results. It is evident, therefore, that the success of clinical obstetrics, as compared with domiciliary practice, is not inconsiderable. For purposes of comparison, the results of various forms of obstetric practice are given in detail: early mortality following the use of the forceps was, in general practice, 6.9 per cent (in the hospital, 1.6 per cent); after version, in general practice, 10.7 per cent (in the hospital, 0 per cent); after manual aid, in general practice, 11.4 per cent (in the hospital, 7.5 per cent); after cesarean section, in general practice, no operations (in the hospital, 3.5 per cent). It is evident, therefore, that the conditions for operative births in the hospital are much more favorable than in general practice, although the hospital has more cases of contamination than are found in general practice. These observations are particularly interesting in connection with the recent recommendation of the minister of the interior that confinements be carried out more frequently in the home than has been done in the past.

MADRID

(From Our Regular Correspondent)

May 17, 1935.

Political Control of Public Health Work

Dr. Victor Cortezo, head of the department of public health, in a lecture recently delivered before the Academia Nacional de Medicina, said that public health work in Spain before 1899 was practiced only by physicians of the ports having as a director an administrator with an office in the ministry of interior. Drs. Cortezo, Pulido and Gimeno's efforts to extend the public health work at that time failed. The development of public health work in Spain since 1899 may be divided into three periods: The first period began with an outbreak of plague in Portugal in 1899, which forced the Spanish government to cooperate with the group of public health workers, who at that time had a very small organization. The advances made during the period up to 1910 included the organization of the central department of public health, the adoption of regulations on national and international sanitation, and the establishment of the Instituto Nacional de Higiene by Drs. Cajal and Cortezo. The second period, from 1910 to 1923, began with the outbreak of cholera in Russia and its spreading to the northern regions of Italy and to Germany, Austria, Hungary, Turkey, Rumania and France. In this period the sanitarians were very active and their efforts and those of the government restricted the epidemic of cholera to a few cases that occurred in the towns of Vendrell and La Riera. Then the personnel that had been trained to fight the cholera epidemic were used to fight typhus in Gijón, plague in the Canary Islands, Malaga and Barcelona and other local epidemics in several provinces. The third period, from 1923 to 1935, was characterized by the organization of several health centers for the care of the sick and the isolation of persons

suffering with plague. These centers were either aided or supported by the state, the county or the provinces. They functioned successfully during the first few years while support was given to them, but the discontinuation of governmental support resulted in either their closure or the transfer of the center to the state, to be used for other purposes of public welfare. A case can be cited. The regional leprosarium of Andalusia, which was given at the beginning to the provincial committee of deputies of Granada, is now used as an asylum for children and the problem of isolating the lepers of Andalusia is still unsolved. At present the national budget allows three times as much money for public health as it did during the time of the kingdom. Departments and branches of the public health administration have been established even in distant small towns. Owing, however, to the fact that many of the persons appointed to health positions are not trained sanitarians, the work in the field is not as satisfactory as it should be. The fact that the field sanitary work is controlled by the state has resulted in the disappearance of some health centers, such as the Liga contra la tuberculosis and the Liga contra el cáncer. The latter used to provide Madrid with about 200 beds for patients with cancer. The public health work at present is greatly affected by political and economic conditions. Formerly the public health department had a general director. Later he was called sub-secretary of public health and still later he was called head of the public health in the ministry of labor and public health, which departments now are merged. No more are sanitarians consulted on the preparation of public health regulations; they first know of them only after their publication in *La Gaceta*, the official journal.

New Hospital Opened in Madrid

For a long time most of the hospitals in Spain were Catholic, having a chapel for religious services, a chaplain paid by the government, and sisters for the care of the patients. During the last few years, most of the hospitals have functioned under a different system. In many of them, nurses have been substituted for the sisters. A new hospital, in which the standards of the Catholic hospitals of the United States were followed, was recently opened. Dr. Baldomero Castresana and the bishop of Madrid collaborated in the organization of this hospital. There are now sixty beds ready for patients. Dr. Enrique de Salamanca, the director of the laboratory, is now in the United States visiting laboratories and research centers to study the latest improvements. The expenses of the hospital are supported by donations from Catholics in any country as well as by a percentage of the income of the Catholic churches in Madrid. Priests who help support the hospital are given in turn the privilege of providing free medical care to a certain number of poor patients in the hospital. The hospital is well equipped and meets all the modern requirements of a good hospital.

Eighth Centennial of Birth of Maimonides

Ceremonies were recently held in Córdoba and in Madrid to celebrate the eighth centennial of the birth of Maimonides, the Spanish rabbi and philosopher. Drs. Goyanes and Garcia del Real, in addresses, reviewed his history in connection with the development of medicine. During the twelfth century, Arabic Spain had seventy public libraries and seventeen centers for higher education. Great devotion to studies was necessary then to secure an education. Maimonides drank deeply at the fountains of knowledge, but religious persecutions arose and Maimonides left Spain for Africa. His contact with the Greek and Roman literature influenced his medical writings, in which he followed the galenic and hippocratic traditions. Maimonides was highly accomplished. His interpretation of the Bible and of the Talmud led his people to consider him a saint. When he died, in 1204, he was physician to the sultan of Egypt and the head of the Jewish people at Cairo. Some of his books in the libraries of Spain are Alimentos prohibidos, Venenos y sus remedios, Aforismos de medicina, Cánones de medicina práctica, Tratado de higiene, El coito, Causas de las enfermedades, La curación del asma, Dieta, Schsmorich Paraquim, Libro del conocimiento, and The Guide for the Perplexed. The last mentioned book was translated from the Arabic into the English language by Friedlander and published by E. P. Dutton & Co. of New York.

Personals

Dr. Enrique Suñer, professor of diseases of children to the Faculty of Medicine of Madrid and organizer of the Escuela Nacional de Puericultura, who some time ago was removed as director of the school, a position which he had had for a long time, has been reappointed to the same position by a decision of the supreme court, to which he appealed. His appointment received general approval.

JAPAN

(From Our Regular Correspondent)

April 26, 1935.

Priority of Discovery of Cause of Tsutsugamushi Disease

Tsutsugamushi is a serious disease, which has been widely known more than half a century, and thirty years or more has been given by many investigators to discover its cause. Not a few of these workers have fallen victims to the disease. The question of priority in the discovery of the cause was once more an issue in the annual meeting of the Japanese Pathologic Society, held in April in the Nigata Medical College. Prof. Dr. Ogata of the Chiba University, a bacteriologist, read a paper on the question. He insisted that he discovered its cause in 1927 to be Rickettsia tsutsugamushi. His work has since then been confirmed by others.. In 1930 Dr. Nagayo, now president of the Tokyo Imperial University, and then the chief of the Infectious Disease Research Institute, with his colleagues, borrowed the germ from Dr. Ogata and succeeded in detecting the organism, but by methods different from the method of Ogata. They for the first time named it Rickettsia orientalis. In 1931 Prof. Dr. Kawamura of the Nigata Medical College succeeded by a new method in detecting the same cause; in the next year Prof. Dr. Saibe of the same institute also was successful, but he unhappily fell a victim to the disease. In recognition of their work those four researchers were awarded prizes. When Ogata discovered the cause in 1927, he did not give it a name. He considered this research so important that he assumed a cautious attitude. But suddenly Dr. Nagayo named it without referring to Ogata's discovery. Discovery and naming a discovery are quite different. In 1923 Sellards obtained a micro-organism from a case of this disease and named it Rickettsia nipponica, mistaking that micro-organism for its true cause. So in Otto's writings in 1934 it is said that the cause of tsutsugamushi is Sellard's Rickettsia nipponica, which is of course a mistake. In 1931 Professor Kawamura found an "akamushi," which means almost the same thing as "Rickettsia," and so gave the name of Rickettsia akamushi; but in 1934 this name was again changed to Rickettsia tsutsugamushi-orientalis (Nagayo et al.). This long name cannot be said to be proper and satisfactory.

Dr. Ogata declares that he would not compromise so far as the discoverer is concerned, insisting that he is entitled to priority. At the same time he hopes that the name of the causative agent will soon be decided, so that mistakes may be avoided at home and abroad. He proposed the name Rickettsia tsutsugamushi, but if any one objects to that it might be called Rickettsia tsutsugamushi s. kedani, as the word "kedani" has long been associated with this disease. On the other

hand, the members of the Infectious Disease Research Institute, of which Dr. Nagayo was long the chief, believe that the true cause was first detected by them, and to prove it, Ogata in 1931 was awarded the "Wiihew" prize of the pathologic society. The paper made public by the members of the institute in 1924 is said by them to be the first valuable literature on its cause, and that paper decidedly settles the question of priority. Dr. Ogata says it has no connection with the discovery of the cause and is a mere report of the progress of their research.

Memorial to Dr. von Siebold

The first physician who introduced European medicine into Japan by teaching medical science and treating patients was Dr. von Siebold, a German. He was the first who taught Japanese doctors clinically. To celebrate this valuable assistance an exposition is being held in Tokyo at the science museum. Von Siebold's efforts covered so many branches of science that medicine was only a small part of them. In 1820, at the age of 28, after graduating from a German university, he came to Japan as a ship doctor of the Dutch East India Company. He was keenly interested in teaching earnest students about European civilization. The methods taught by him opened the eyes of old-fashioned students. In the present memorial exposition there are exhibited more than 300 publications, which were borrowed from his native country, and more than 400 collected for the purpose in this country. Among others, are shown his valuable works "Flora Japonica" and "Fauna Japonica." As for his medical papers, only a few are kept, to the great regret of Japanese physicians. From those few papers it is known that he gave his followers many questions to solve in a scientific way; on the other hand, he was much interested in Japanese acupuncture, and he translated a work on this subject into German.

Native Population Decreasing in the Yap Islands

The Kanakas, the inhabitants of the Yap Islands, which are now under the mandatory administration of Japan, will become extinct in thirty years, says Ihara of the sanitary bureau of the Home Office, after an inspection tour of those islands. He gave the following report concerning the cause of the rapid decrease of the Kanakas: Widespread gonorrheal infections, tuberculosis, dysentery and typhoid, brought by immigrants from more civilized nations, are the chief causes of the rapid decrease of births and the increase of deaths. The islanders are much averse to any new medical treatment or even examination. They seem to have no idea of birth control. There are many who attribute pregnancy to the gods. Intemperance and overwork during pregnancy seem to cause much abortion. Poor sanitation, with almost no idea of cleanliness or ventilation, is also an important cause. The prohibition of drinking resulted in idleness, for they formerly worked so as to be able to buy liquor, whereas now they do nothing to develop their bodies. They are also ill nourished. There is need for the authorities to inculcate some idea of sanitation and prevention of disease.

The Period of Pregnancy

Dr. Obata, director of the Hamada Hospital in Tokyo, read a paper on the period of pregnancy at the spring meeting of the gynecologic society. The old theory that pregnancy continues for 280 days is incorrect. According to his report, only 3.8 per cent of pregnant women are delivered in 280 days. Of 10,000 pregnant women who came to his hospital, the pregnant period was from twenty-nine to fifty weeks. He found that the period usually was from 263.9 days to 297.3 days. The weight of the baby usually was between 2,475.9 and 3,344.7 Gm. About thirty women who happened to know exactly the day of conception stated that the period was between 288 and 233 days. Obata concluded that the period of pregnancy is indefinite and depends chiefly on the individual.

Marriages

FRANK LESLIE MILLIGAN, Jefferson City, Tenn., to Miss Mildred Osborne of Leechville, Ark., in Manila, Ark., June 4.

WYCLIFFE CHARLES JACKSON, Jenkinjones, W. Va., to Miss Mary Stuart McCallum of Rowland, N. C., June 1.

GEORGE MIDDLETON IRWIN, Lewistown, Pa., to Miss Mary Elizabeth Dunbar of Washington, N. J., May 11.

DELMAR O. RHAME JR., Clinton, S. C., to Miss Henrietta Toole of Johnston, June 5.

FRANK E. ADAIR to Mrs. Marion Hopkinson Brooks, both of New York, May 29.

Deaths

Clarence St. Clair Drake ✠ Jacksonville, Ill.; Chicago Homeopathic Medical College, 1891; Chairman of the Section on Preventive Medicine and Public Health of the American Medical Association, 1918-1919, and Member of the House of Delegates in 1920; member of the American Psychiatric Association; statistician for vital statistics, Chicago Health Department, 1895-1909; member, secretary and executive officer of the Illinois State Board of Health, 1914-1917; director of public health for Illinois, 1917-1921; educational field director of the American Public Health Association, 1925-1929; since 1929 managing officer of the Jacksonville State Hospital; aged 65; died, June 2, of heart disease.

William Jackson Merrill ✠ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1902; associate professor of orthopedics, University of Pennsylvania Graduate School of Medicine; member of the American Orthopedic Association; fellow of the American College of Surgeons; served during the World War; orthopedic surgeon to the Children's, Misericordia and Jewish hospitals, Philadelphia, Children's Seashore House, Atlantic City, N. J., the Williamsport (Pa.) Hospital, the George F. Geisinger Memorial Hospital, Danville, and the Lock Haven (Pa.) Hospital; aged 66; died, May 10, of pneumonia.

Henry Edward Oesterling ✠ Winter Park, Fla.; University of Pennsylvania Department of Medicine, Philadelphia, 1897; member of the West Virginia State Medical Association and the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; formerly on the staff of the Ohio Valley General Hospital, Wheeling, W. Va.; aged 62; died, May 22, in the Graduate Hospital of the University of Pennsylvania, Philadelphia.

Joshua George Ross Manwaring ✠ Flint, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1901; member of the House of Delegates of the American Medical Association in 1930; past president of the Genesee County Medical Society; one of the founders and fellow of the American College of Surgeons; formerly on the staff of the Hurley Hospital; aged 57; died, April 17, of angina pectoris.

George Bronson Philhower, Nutley, N. J.; University of the City of New York Medical Department, 1886; member of the Medical Society of New Jersey; past president of the Essex County Medical Society; for many years president of the board of health of Nutley; member of the board of education; on the staff of the Presbyterian Hospital, Newark; aged 72; died, May 23, in St. Barnabas Hospital, Newark.

Brace Whitman Paddock ✠ Pittsfield, Mass.; Columbia University College of Physicians and Surgeons, New York, 1904; fellow of the American College of Surgeons; past president of the Berkshire District Medical Society; on the staff of the House of Mercy Hospital; aged 56; died, May 22, of arteriosclerosis.

Edward W. Boyer, Waterville, Me.; University of Vermont College of Medicine, Burlington, 1887; member of the Maine Medical Association; past president of the Kennebec County Medical Society; formerly member of the board of education; on the staff of the Sisters Hospital; aged 70; died, May 6.

Clinton LeRoy Pugmire, Ogden, Utah; Northwestern University Medical School, Chicago, 1932; aged 30; died, April 21, in the Dee Memorial Hospital, of streptococcic septicemia following a small wound on his finger received while attending a patient.

Thomas Elmer Roberts ✠ Oak Park, Ill.; Chicago Homeopathic Medical College, 1888; Rush Medical College, Chicago, 1897; veteran of the Spanish-American War; aged 70; died suddenly, June 9, of heart disease while playing golf at El Paso, Texas.

Hubert De Laserre Spence, Painesville, Ohio; Homeopathic Hospital College, Cleveland, 1885; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1897; aged 76; died, May 5, of coronary thrombosis.

Zach Godfrey Smith, Marion, S. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1889; member of the South Carolina Medical Association; aged 65; died, April 20, in the McLeod Infirmary, Florence, of bronchopneumonia.

Edward Maurice De Castro Jr. ✠ Brooklyn; Long Island College Hospital, Brooklyn, 1898; on the staffs of the Caledonian and Harbor hospitals and the Brooklyn Home for Consumptives; aged 55; died, June 2, of heart disease.

Mary Elizabeth Bradford, Newburgh, Ind.; Woman's Medical College, Chicago, 1887; formerly a medical missionary in Persia; aged 77; died, June 10, in the Deaconess Hospital, Evansville, following an operation for appendicitis.

Louis Philip Rich ✠ Fredericksburg, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1903; served during the World War; aged 59; died, May 5, of angina pectoris and arthritis.

Benjamin Earle Bostwick ✠ New Milford, Conn.; Long Island College Hospital, Brooklyn, 1896; past president of the Litchfield County Medical Society; aged 68; died, May 26, of coronary thrombosis.

Arthur Lloyd Chapman, Rahway, N. J.; Meharry Medical College, Nashville, Tenn., 1931; aged 31; died, April 12, in the Bonnie Burn Sanatorium, Scotch Plains, of pulmonary tuberculosis.

John Joseph Gaines, Excelsior Springs, Mo.; University Medical College of Kansas City, Mo., 1893; member of the Missouri State Medical Association; aged 73; died, April 5.

Elizabeth Garlick Smith, Bridgeport, Conn.; United States Medical College, New York, 1883; aged 86; died, March 18, of diabetes mellitus and gangrene of the left foot and leg.

Hugh Nutting, Washington, D. C.; George Washington University School of Medicine, Washington, 1906; aged 57; died, March 12, of coronary occlusion and arteriosclerosis.

Judson J. Shultz, Delphi, Ind.; Eclectic Medical Institute, Cincinnati, 1879; member of the Indiana State Medical Association; aged 79; died, May 21, of heart disease.

Clarence Alfred Trainor, Los Angeles; Northwestern University Medical School, Chicago, 1910; aged 51; died, suddenly, May 17, of coronary occlusion.

Llewellyn Henry Johnston, Milwaukee; University of Toronto (Ont.) Faculty of Medicine, 1907; aged 62; died, May 3, of cerebral hemorrhage.

Fred Sumner Smith, Chester, Conn.; Yale College Medical Department, New Haven, 1882; aged 79; died, April 24, of carcinoma of the rectum.

Thomas E. Stucky, Milroy, Ind.; University of Louisville (Ky.) School of Medicine, 1874; aged 82; died, April 30, of cerebral thrombosis.

William Converse Phillips, Zephyrhills, Fla.; Boston University School of Medicine, 1896; aged 79; died, May 7, of angina pectoris.

Andrew William Imrie, Los Angeles; McGill University Faculty of Medicine, Montreal, Que., Canada, 1879; aged 78; died, April 13.

Max J. Stern, Atlantic City, N. J.; Jefferson Medical College of Philadelphia, 1885; aged 73; died, April 25, of bronchopneumonia.

Marcus Spiro ✠ Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1893; aged 70; died, April 21, of myocarditis.

Ella Mansfield Caryl, Los Angeles; California Eclectic Medical College, Los Angeles, 1914; aged 74; died, April 3.

Alice Morrison Swayze, Los Angeles; California Medical College, San Francisco, 1895; aged 77; died, April 25.

Carrie A. Goss Haskell, San Francisco; Chicago Homeopathic Medical College, 1878; aged 77; died, April 7.

Willis Grant Hatch ✠ Santa Cruz, Calif.; Rush Medical College, Chicago, 1897; aged 65; died, April 16.

Harry Ford Scudder, Los Angeles; Eclectic Medical Institute, Cincinnati, 1893; aged 63; died, April 9.

George W. Simcoe, Fulton, Mo.; Missouri Medical College, St. Louis, 1881; aged 86; died, April 22.

Bureau of Investigation

ULTRASOL

Another Fantastic Cosmetic

An alleged hair grower "Ultrasol" is put out by a concern known as the Post Institute, New York City. It is said to contain "soothing oil, lemon juice, eggs, pituitary gland extract, sulphur." Elsewhere Ultrasol is described as "a compound involving the presence of vitellin, nuclein, cerebrin, lecithin and cholesterin."

In its advertising the company has claimed that men and women, after using Ultrasol, have reported enthusiastically that "fuzz at the temples grows to long, mature hair," that "abnormal hair falling stops," that "Ultrasol keeps the hair brilliant" and that "the scalp feels clean, fresh, free from dandruff." These statements are featured, and then follows the statement that "we do not claim that Ultrasol does any of these wonders"!

In June, 1929, the Division of Legal Medicine of the Department of Health of the City of New York wrote to the Bureau of Investigation and stated that "the Post Institute is operating a quack game" and that the Department was anxious to get any information about one "Dr. John Post" who was alleged to have formerly practiced as a dermatologist in New York City and to have died in 1916. A most careful search of the files of the American Medical Association was made. From 1886 until 1916 there was no record of a man by the name of John Post who was a graduate of any reputable medical school who practiced in New York City as a dermatologist.

In June, 1933, the Federal Trade Commission wrote to the Bureau of Investigation with reference to an "alleged Dr. John Post" of 30 Irving Place, New York City, who had been described in an advertisement as a "Dermatologist to Royalty." The Commission stated that its efforts to elicit information on the alleged Dr. John Post had not been successful. The Commission stated further that it had been told that the Post person was an Englishman with a foreign degree and that he had conducted a sanitarium on Cape Cod and had died in 1918 or 1919. The Commission was told of the investigation made at the request of the New York Health Department in 1929 that had been unsuccessful; the Bureau also made another investigation at the time of the Commission's request. This was equally unsuccessful. Furthermore, the Commission was told that if John Post had conducted a reputable sanitarium on Cape Cod any time within the past quarter of a century, the American Medical Association would no doubt have had some record of the fact; it had no such record.

In 1934 the National Better Business Bureau wrote to the Bureau of Investigation regarding the Post Institute and its nostrum Ultrasol. The Better Business Bureau reported that the alleged ingredient of Ultrasol on which the Post concern placed most emphasis was pituitary gland extract, and the Bureau asked whether there was any evidence to indicate that rubbing pituitary gland extract on a bald head would raise hair. The Bureau of Investigation replied that the claim was about as fantastic a piece of hokum as had been seen for a long time. As a result of the Better Business Bureau's report on the Post Institute, a letter was written by one Louis J. Stern of the Institute, stating that the "value of the pituitary extract [in Ultrasol] does not depend upon its being absorbed *through* the scalp, but rather in penetrating along the hair shafts to the hair glands." Mr. Stern further expressed the opinion that in "view of the fact that some extracts of the pituitary are capable of causing powerful uterine contractions in a dilution of one in one hundred billion, it is quite reasonable to suppose that when a powerful chemical such as this is applied locally, it would also have some value."

There seems to be no limit to the fantastic lengths to which certain exploiters of cosmetic preparations will go in selling their nostrums. They know, of course, that there is no national law that puts any penalty on the most preposterously misleading or even fraudulent claims. So far as the federal government is concerned, the sale of cosmetics today is as free from regulation as the "patent medicine" business was prior to 1907.

Correspondence

TREATMENT OF SCURVY WITH CRYSTALLINE VITAMIN C

To the Editor:—Dr. Irving Sherwood Wright of New York has called my attention to a report of his (Treatment of Adult Scurvy and Crystalline Vitamin C [Ascorbic Acid], *Proc. Soc. Exper. Biol. & Med.* **32**: 475 [Dec.] 1934), in which capillary fragility was reported as one of the signs of scurvy which responds to injections of cevitamic acid.

Dr. Russell and I would have quoted this earlier observation in our recent paper (The Effect of Cevitamic Acid Injections on Capillary Resistance, THE JOURNAL, May 11, p. 1701) if we had been acquainted with it. It appears to be the first published report of the effect of cevitamic acid on capillary fragility. A complete report by Dr. Wright will soon appear in the *Archives of Internal Medicine.*

GILBERT DALLDORF, M.D., Valhalla, N. Y.

MENINGOCOCCUS TOXIN

To the Editor:—The article entitled "Active Immunization with Meningococcus Toxin" by Ferry and Steele, published in THE JOURNAL, March 23, has provoked requests for this toxin to be used for active immunization against meningococcic meningitis. It was not the intention of the authors to convey the impression that this toxin is available for distribution or that proof of active protection against the disease had been established. In fact, in the body of the paper the latter phase of the problem is covered in the statement "While the results of these tests indicate certain facts in regard to the stimulation of active immunity in man against meningococcus toxin, they do not necessarily signify that an immunity against the organism can be produced at the same time."

N. S. FERRY, M.D.
A. H. STEELE, M.D.
Detroit.

SO-CALLED NEW DISEASES

To the Editor:—Besides infantile paralysis and encephalitis spoken of by Hans Zinsser (THE JOURNAL, May 11, p. 1700), many other diseases with marked characteristics have emerged within the last century, and even within the last few years. This seems strange, in view of the fact that it is often stated that physicians of the past possessed a very keen sense of observation and their "horse sense" was by far superior to modern clinical and laboratory methods.

In this connection it is of interest to quote a statement by the French clinician Edouard Rist:

"It is strange," writes Rist (La tuberculose, Paris, Librairie Arman Colin, 1927), "that certain affections, the symptoms and course of which appear to us sufficiently characteristic as to be distinguished by simple clinical observation without the assistance of special technical methods, failed to be identified by our predecessors for many centuries. Measles and scarlet fever, for example, were first described in the eighteenth century and for a long period afterward were confounded with other diseases. Diphtheria, typhoid fever and pneumonia were identified at the beginning of the nineteenth century."

"In truth," continues Rist, "the most reputable physicians of the past were poor observers. Nourished by dogmas and not by facts; enslaved by a scholastic mentality—resentful of criticism, they lacked the open minded attitude indispensable to the disinterested study of natural phenomena. They shared this deplorable state with 'scientists' in other branches."

"One should not forget," goes on Rist, "that the scientific approach was initiated in the sixteenth century by a few extraordinary personalities as Leonardo and Vesalius. To the end of the seventeenth century this was looked upon as a heresy, and only toward the end of the eighteenth century it, finally, won the respect and the encouragement of a very limited élite. Its triumph, which has upset the manner of thinking and the mode of living and which has changed the face of our planet, occurred only during the nineteenth century."

With all due respect to the triumph that modern medicine has attained, one must admit humbly that many diseases still escape observation in spite of the "open minded" attitude and technical perfection. Our successors, too, will probably discover "new diseases" with "striking characteristics." They probably will speak of us in harsh tones such as Rist employs in speaking of our predecessors.

B. M. FRIED, M.D., New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

NARCOTIC ADDICTION

To the Editor:—I have a patient who has been using morphine since 1898 and has cost his brother, who is quite well to do, several thousand dollars. This patient has been in numerous sanatoriums and several years ago I was called to a local hotel to see him (I had never seen him before) and he told me, his statement being confirmed by relatives, that he had just been released from a well known institution and had been pronounced "cured." He was vomiting most severely and was beginning to enter into coma; for several days it required considerable care on my part and with nursing he finally came out of it but only after I had administered, in the presence of other physicians, 3 grain (0.2 Gm.) doses of morphine sulphate. After I had obtained the man's history, two other physicians and myself decided that he was a chronic addict and that morphine was essential for him to live. Time after time I have tried to reduce his dosage but finally gave it up as a bad idea and the other doctors decided likewise. It was agreed that he would come under article 85, exception 2, of the Harrison act wherein it was all right to give a chronic addict sufficient narcotics to maintain health. The patient has seemed willing to work with me and his brother gives him an ample allowance, but his tolerance has reached the point at which I am at sea and want some advice. I have seen the man take 25 grains (1.6 Gm.) of morphine sulphate subcutaneously and apparently suffer no ill effects, and at present I am giving him 3 drachms (11.6 Gm.) each week. Unless I do, he swells, he is extremely toxic, for he does not eliminate, respiration almost ceases, and vomiting always occurs. A large dose of morphine relieves this. When I was in college in 1913 our teacher was a Dr. Schultz, who was formerly (for twelve years) with the standardization of drugs department in the U. S. Health Service at Washington, D. C., aud he told us that 3 grains was the maximum dosage of morphine. Can you enlighten me on this patient? He is 69 years old and does not drink alcohol to excess. Please publish, for I would like to know how much morphine can be taken without the addict dying.

M.D., West Virginia.

ANSWER.—Drug addiction creates no physical disease necessitating its own continuance or renewal after the habit is broken. When the correspondent saw the patient for the first time he was suffering from abstinence symptoms. The continued narcosis locks up the secretions and excretions of the body, and catabolic products and intestinal fermentation produce a mixed toxemia. When an attempt is made to stop the use of the drug without proper treatment, pathognomonic withdrawal or abstinence symptoms appear, which are promptly relieved by a dose of morphine. These are the result of the release of cells from a long maintained functional depression or inhibition, taking the form of exaggerated activity of the different organs.

These symptoms last and increase from forty-eight to seventy-two hours and then diminish. They vary and are not so severe as ordinarily supposed. There is no danger of death when the addict is in fair condition. The asthenic symptoms that follow the detoxication are due to the nervous exhaustion following the long period of continuous narcotization of the nerve cells and last about six weeks.

Either the patient had not been taken completely off the morphine or seventy-two hours had not elapsed since his last dose of morphine when he was released from the pay institution. There is also the possibility that if several days had elapsed since his discharge he had started using morphine again and that his supply had been interrupted.

That the number of deaths due to narcotics is not great is shown by the records of the Cook County coroner's office.

From 1916 to 1924 an average of six deaths from narcotics a year has occurred in Chicago and Cook County, and this figure includes victims who were not habitual users of drugs. A habitué develops a tolerance to large doses of morphine and it is questionable whether a fatal result could be produced in the patient by a drachm (4 Gm.) or more. While many addicts use more than 10 grains (0.65 Gm.) daily there is no real physical need, because if the addict is where his supply can be controlled from 8 to 10 grains (0.5 to 0.65 Gm.) of morphine will prevent any abstinence symptoms; but he does not get the pleasure or "kick" effect. When an addict says that he takes his drug only to feel normal, his ideas of normal are normal plus. This pleasure effect of narcotics varies in different persons from a feeling of comfort and relief to a wild, delirious "jag"; so the amount used is usually limited by his available supply. A true comparison can be drawn in alcoholism; an alcoholic addict who is taking considerable daily amounts begins to suffer when his alcohol is stopped or attempts are made to reduce his regular dose, and in the morning he must have a drink or several drinks before he can carry on; if he does not get it he is a nervous wreck. Few morphine addicts use alcohol in excess. The solution of the drug evil does not rest on the administration of any specific treatment but rather on the removal, where possible, of the underlying causes for which the drug addiction is merely an expression. These causes vary in individual cases; it is not a mass problem. In the normal or nearly normal narcotic user who has acquired the habit through physical disease or discomfort which no longer exists or can be eradicated, if the patient is sincere and willing to stand, as most of us do, the mental and physical stress that is part of life's conflicts without resorting to narcotics, a permanent cure can be expected. For some patients, good health plus normal life do not replace the sensations that narcosis means, and the possessors of these morbid types of personality will use narcotics as long as they live and narcotics are available. The patient in question belongs to this type and the probability of a permanent cure under existing conditions is slight unless he can be put away for a year or longer where the drug is unobtainable. Most relapses are not due to pain or ill health but to a desire for narcotic relief, which may mean anything from simple ease and forgetfulness to wild exhilaration.

EFFORT SYNDROME

To the Editor:—Will you please discuss for me the following symptom complex and suggest treatment: A woman, aged 30, married, without children, complains of repeated attacks of anginal pain, localized in the fourth interspace just inside the apex; a sense of precordial distress with pounding heart beat more or less all the time; some nervousness and insomnia induced by consciousness of the heart beat. She says that she has always had a rapid heart rate. There is no history of any illness of importance. Over a period of several months the pulse rate has varied from 100 to 170, being usually about 150. The heart is not enlarged; the apex beat is very forceful, at times suggesting a thrill. At various times there has been a suggestion of a presystolic rumble, although this has not been heard for several months. The radial pulse is full and regular. Roentgen examination of the heart and gastro-intestinal tract are negative. The basal metabolism is normal. The general physical examination gives negative results. The blood pressure averages about 130 systolic, 84 diastolic. Gastric analysis gives normal results. Various medicines have been used in the treatment in addition to rest. The most benefit seems to have been derived from quinidine sulphate in full doses and iodine, although nothing has brought the pulse rate down nor have the precordial symptoms been entirely relieved. The patient is decidedly nervous, but she does not seem to be apprehensive about her condition, and I think that her symptoms are decidedly real rather than imaginary. I shall appreciate any suggestions about this case. Please omit name and address.

M.D., Alabama.

ANSWER.—The symptoms and observations in this case of a normal sized heart by roentgen examination, normal blood pressure, a full regular pulse, and a normal basal metabolic rate suggest the diagnosis of effort syndrome as the cause of the symptom complex. The etiology of this disease is not known, but it occurs most commonly in females following excessive physical or mental strain. It occurred commonly in soldiers during the war as a result of the excessive effort, while in civilian life the same men leading less strenuous lives would not be subject to the disease. The symptoms and observations are as indicated in the question. The treatment is often difficult and consists of reassuring the patient, trying to eliminate the causes for worry and mental distress, and graduated exercises. This may involve sending the patient to new surroundings or a sanatorium where the difficulties may more easily be adjusted.

The remote possibility of an adhesive tuberculous pericarditis with a normal sized heart must be considered as a cause for the symptoms. The cardiac symptoms are chiefly a result of the mechanical interference with the normal activity of the heart.

CARDIOVASCULAR SYPHILIS

To the Editor:—Last October I was called to see a man, aged 30, complaining of precordial pain and a sense of oppression over the precordia. Close questioning gave a positive syphilitic history fifteen years before, with treatment for one year. The treatment consisted of injections in the vein and the patient was pronounced cured. He also stated that he had three similar attacks within the past five years. Suspecting a possible syphilitic aortitis, I had his chest roentgenographed, and the report was that a widening of the ascending portion and the arch of the aorta was present, suggestive of aortitis. However, a competent clinician from his examination and his own observation of the roentgenogram expressed some doubt as to the diagnosis. The only clinical finding was a hyperactive knee jerk reflex in both legs. The Wassermann reaction was 2 plus. I started the patient on intramuscular injections of bismuth arsphenamine sulphonate. Following the second injection, an itchy maculopapular rash developed on the trunk and both arms. Discussion with syphilologists and the manufacturer placed the cause for this rash on the arsenic in the preparation. Hence I switched over to biweekly injections of 50 mg. of a basic bismuth salt of camphocarboxylic acid. The rash disappeared. Up to the present time the patient has received twenty-four injections. His Wassermann reaction after twelve injections amounted to a trace; a Kolmer reaction after twenty-four injections was 2 plus. A spinal tap done after the first twelve injections showed the spinal fluid negative. Potassium iodide has been given with the foregoing medication. Up to now the patient has been feeling fine. Bimonthly urinalyses are negative. Please advise me as to further treatment; also what will be the significance of a persistent Kolmer reaction? If printed in Queries and Minor Notes, please omit name.

M.D., New York.

ANSWER.—The probability is that this patient has cardiovascular syphilis. Precordial pain, substernal oppression and a widening of the ascending portion and arch of the aorta in the roentgenogram are almost pathognomonic of syphilitic aortitis. As the patient appears to have an intolerance to arsenical preparations, it would be best to continue medication with milder remedies. Iodides should be continued intermittently along with mercurial inunctions or mercury by mouth (mercury with chalk or yellow mercurous iodide pills). This can be alternated with a course of from eight to ten weekly injections of bismuth salicylate. Authorities differ as to the necessity or advisability of administering arsphenamine preparations in cardiovascular syphilis.

The Kolmer modification of the Wassermann test is slightly more sensitive than the original Wassermann. The significance of a persistent Kolmer is about the same as that of a persistent positive Kahn test. Frequently the Wassermann reaction will become negative under treatment and the Kahn or Kolmer reaction may remain weakly positive.

USE OF DINITROPHENOL IN OBESITY DUE TO HYPOTHYROIDISM

To the Editor:—My sister-in-law, a registered nurse, aged 37, height 5 feet 2 inches (157.5 cm.), weight 150 pounds (68 Kg.), during her second year of training in 1927 developed a toxic goiter and was treated in Dublin, Ireland. She was confined in bed fourteen months and was ambulatory six months before resuming training. Her pulse rate was 172 and she was given one hour of roentgen therapy to the front of the neck and one hour to the back of the neck in August 1927 and again two hours in the same manner in March 1928. She improved and finished her training. However, hypothyroid symptoms now are pronounced, she carries excess weight and her pulse rate is consistently 64. The tonsils were incompletely removed in 1918 and she has suffered severe headaches with chronic arthritis for the past ten years. The menstrual periods are regular, of normal duration and without dysmenorrhea. She arrived in New York last September and while visiting there became worse and submitted to a physical survey. She had infected tonsil stubs and a streptococcic infection of both antrums, ethmoids and sphenoids. The basal metabolic rate is —32. Nov. 15, 1934, the tonsil stubs were removed, both antrums were drained through intranasal openings, the ethmoids and sphenoids were cleaned up, and a submucous resection was done. A copious pus drainage occurs as yet on each nasal douching, but the arthritic pain in both shoulders and both knees and the headaches are diminishing. She has been taking 3 grains (0.2 Gm.) of Armour's thyroid daily for the last four weeks and thrives on it. She is gaining weight when she needs to reduce. In view of her history would dinitrophenol be too risky? What would you suggest to reduce her weight with this hypothryroidism present? If published, please omit name and town.

M.D., Ohio.

ANSWER.—The gain in weight following recovery from toxic goiter is not necessarily, or even usually, a manifestation of myxedema. It occurs frequently after thyroidectomy or roentgen treatment at a time when the basal metabolism is normal or even high and no definite signs of hypothyroidism (dryness or myxedema of the skin, physical and mental sluggishness, menstrual disturbances, low blood pressure, anemia, loss of hair, constipation) are noticeable. On the other hand, patients with typical postoperative myxedema with low metabolic rates may not gain much weight beside that due to water retention.

Weight gained immediately following recovery from thyrotoxicosis is chiefly that which was lost during the period of development of the toxic goiter. The gain is occasionally

greater than the previous loss, probably because the sudden shift from the negative to the positive energy balance upsets to some extent the previous level of body fat content regulation. The marked tendency to gain weight in the case described, seven years after recovery from thyrotoxicosis, might have spontaneously appeared at this period of life of the patient, regardless of the previous history, as it does in many cases of uncomplicated obesity.

Accordingly, the dietetic treatment of the obesity must receive as much attention in this case as in any other case. In addition, the administration of thyroid substance is indicated in this case to combat water retention and relieve other symptoms of myxedema. The amount given may not be sufficient and should be raised to the tolerance limit, judged by clinical signs and by repeated metabolism tests.

Alpha-dinitrophenol (1-2-4) is probably no more risky in this than in other cases. It may cause a loss of weight but does not relieve the direct symptoms of myxedema (Tainter, M. L.; Stockton, A. B., and Cutting, W. C.: Use of Dinitrophenol in Obesity and Related Conditions, THE JOURNAL, Nov. 4, 1933, p. 1472).

ENLARGEMENT OF CERVICAL LYMPH GLANDS

To the Editor:—A three year old girl was brought to me because of enlarged cervical glands on the left side of several months' duration, apparently not dating back to an acute infection of the upper respiratory tract. These glands are distinct, are the size of beans, and are not adherent to the skin. There are no other glands; the spleen is not palpable. The child is apparently in the best of health, is gaining weight and is very active. The remainder of physical examination is essentially negative. The tonsils are enlarged but apparently not diseased. The child has had no serious diseases. She had whooping cough about a year ago. A Mantoux test was markedly positive. A roentgenogram of the chest did not reveal any pathologic changes. There is no history of tuberculosis in the family. What is the significance of the positive Mantoux test in this case? Would it be advisable to remove the tonsils? Please omit name.

M.D., Minnesota.

ANSWER.—While tuberculosis is only one cause of enlargement of the cervical lymph nodes, it must be considered, since the tuberculin test is positive. On the other hand, a positive test does not necessarily mean that the tuberculous disease is in the lymph nodes. The test indicates merely that tuberculosis is present somewhere in the child's body. The fact that the x-ray film does not reveal any evidence of pathologic changes in the lungs is not significant. In such cases, x-ray films are helpful only when they reveal definite evidence of disease. A negative film of the chest, like a negative laboratory examination of the sputum, by no means rules out disease. Tuberculous foci of first infection often exist in the lungs of such size that they do not cast shadows on the x-ray film that one is able to visualize; therefore the negative film of the chest is not good evidence that the tuberculous lesions are not in the lungs. There is no way to determine with certainty whether or not the cervical lymph nodes are tuberculous except through biopsy, and they are so small that this would hardly seem justified. If the nodes are the seat of the tuberculous foci, x-ray films through the cervical region may in time show evidence of calcium deposits in them. While this is good evidence of tuberculosis, it cannot be compared with biopsy from the standpoint of accuracy in diagnosis.

The fact that the child is in the best of health, is gaining weight and is very active is quite in keeping with the first infection type of tuberculosis. Indeed, there usually are no outward manifestations of the existence of this disease in children of any age. Drolet has called attention to the fact that only 1.03 per cent of children who develop the first infection type of tuberculosis up to the age of 15 years die of tuberculosis.

The same condition that resulted in hypertrophy of the tonsils may be responsible for the enlargement of the cervical lymph nodes. There is controversy regarding the removal of tonsils in children, but the general opinion is that unless they are definitely infected and are harbingers of pathogenic microorganisms, such as tubercle bacilli, or are sufficiently large to obstruct the air passages, it is better not to remove them.

Even if the lymph nodes should prove to contain tuberculous lesions, in all probability it is of the first infection type and no special treatment is indicated. In a child of 3 years with a positive tuberculin reaction, the source of the disease will probably be found in an unsuspected form in some of the close human associates. The best treatment consists of finding the source and breaking the contact with the child. Beyond that, the ordinary care that any normal child should receive by way of diet, rest and atmospheric conditions is all that is necessary. However, as the period of puberty is approached, periodic examinations, including x-ray films of the chest, should be made every year and preferably every six months, since it is during this period that the destructive type of tuberculosis begins to make its appearance with considerable frequency.

ORR TREATMENT OF FRACTURES AND OSTEOMYELITIS

To the Editor:—Please describe the Winnett Orr treatment of infected fractures and osteomyelitis. Please omit name.

M.D., New York.

ANSWER.—Orr's method was developed as a reaction against practices which included timidity in operating, overboldness in operating, failure to drain adequately, inability to recognize acute bone abscess, and too many disturbances during the patient's attempt at healing.

The principles of the Orr treatment include: (1) good surgical operation providing adequate drainage, (2) wide-open packing of the wound with petrolatum gauze, (3) immobilization of the extremity, and (4) the minimum number of dressings.

Orr's chief contributions to this subject are: (1) the reduction in the number of dressings; that is, the reduction in the number of times the wound is exposed to further contamination and the reduction of the pain and suffering that are caused by repeated dressings; (2) rest of the wound; (3) avoidance of painful dressings, and (4) the saving of the bacteriophage.

Orr advises: (1) immediate adequate drainage at whatever stage the osteomyelitis is encountered; (2) the maintenance at rest of inflamed parts by the application of a plaster-of-paris cast, aided if necessary by ice tongs or other methods of skeletal fixation; (3) wide-open drainage by means of a sterile petrolatum pack; (4) primary asepsis or antisepsis, avoiding the use of irritating antiseptics in the wound; (5) postoperative care, emphasizing rest without antiseptic dressings, which usually increase and complicate infection; (6) maintenance of all injured parts, bones and soft parts, in their correct anatomic position during the entire period of healing.

In a discussion of the treatment of compound fractures, Orr states that a certain dexterity in the use of moleskin traction, plaster-of-paris and skeletal traction devices, sometimes included in plaster-of-paris casts, is essential. He states that these appliances are not only comparatively simple and easy to use but also more effective than other splints and traction devices in ensuring more permanent length, correct position and immobilization. The first operation sees the wound cleaned and the bones immobilized in the correct position.

Orr states that, when a compound fracture occurs, the bones involved are not only broken but thrown forcibly out of their normal position. It is therefore of paramount importance that these bones be restored as nearly as possible to their correct position and that between the time of fracture and the time of restoration as little damage as possible be done to the tissues surrounding the fracture. To ensure this, it is best to splint the patient at the scene of the accident and to place the bones in the correct position at operation and immobilize them. It is highly important that this immobilization be maintained.

Wound treatment is secondary in that it is possible to provide an aseptic wound that will heal easily and satisfactorily while at the same time giving primary consideration to the fractured bones. He advises wide open drainage without the use of drainage tubes, usually without sutures.

The correspondent should refer to a book by Dr. H. Winnett Orr, called "Osteomyelitis and Compound Fractures," published by the C. V. Mosby Company, St. Louis, in 1929.

ATROPHY OF TESTIS AFTER INGUINAL HERNIOTOMY

To the Editor:—Are there any statistics available that will show the percentage of atrophy of the testicle following inguinal herniotomy? A local doctor—not a member—is urging suit against one of our local surgeons because of atrophy of the right testicle following herniotomy. I do not know the type of repair used but told the doctor and attorney that in my opinion the fact that the testicle is atrophied following the operation does not prove poor surgery or mismanagement and made the statement that often orchitis followed hernial repair and that sometimes atrophy followed. They want to know in what percentage atrophy follows and I cannot even guess at the figure. Of course it is small but the fact that it has happened before may help prevent this case going further.

M.D., Illinois.

ANSWER.—W. S. Halsted reported (Discussion on Hernia, *Tr. Am. S. A.* **13**:343, 1895) three cases in which atrophy of the testicle occurred after his operation for hernia, in which some of the large veins were ligated to diminish the size of the cord. He stated that they had stopped ligating the veins of the cord as a routine part of his operation.

Cattell and Anderson, in a follow up of 150 patients operated on for hernia at the Lahey Clinic found (*New England J. Med.* **205**:430 [Aug. 27] 1931) that in ten, or 6.7 per cent, of cases examined there was evidence of atrophy of the testicle on the operated side. In none of these was there any atrophy noted previous to operation. They emphasized the importance of leaving an adequate opening for the passage of the cord without interference with its blood supply. In five of these cases

in which atrophy occurred, operation had been done by the Gallie technic. In the other cases apparently the Bassini technic was used.

In a report of 1,878 operations for hernia (*Tr. Am. S. A.* **48**:306, 1930) Gibson and Felter reported the occurrence of epididymitis and orchitis twenty-one times, or 1.1 per cent, the cutting with repair of the vas twice, the cutting of the cord followed by removal of the testicle once, hydrocele seventy-four times, spermatocele once and varicocele twenty-three times. They did not report the incidence of atrophy of the testicle, but it is well known that atrophy of the testicle frequently follows traumatic epididymo-orchitis. McCullagh reported (*M. Clin. North America* **17**:969 [Jan.] 1934) the occurrence of hypogonadism in two cases seen following hernia operations. In both cases the testicles were smaller than the average, but there was no record of the size before operation.

Claverley called attention (*Lancet* **1**:277, 1917) to the occurrence of atrophy of the testicles on the same side with a hernia before operation and reported two cases which he thought were coincidental rather than due to a developmental condition. He emphasized the necessity of the patient signing a statement of this condition before operation as a safeguard to the surgeon in case of litigation.

DRESSING FOR LABORATORY TABLES

To the Editor:—Some time ago, if I am not mistaken, there appeared in this department of THE JOURNAL a description of a method for finishing the tops of laboratory desks. Can you supply me with the formula?

D. W. CARTER JR., M.D., Dallas, Texas.

ANSWER.—As considerable time has elapsed since we published the formula for an ebonizing preparation to render laboratory tables resistant to staining or corroding chemical reagents we repeat it herewith:

Solution A:	
Copper sulphate and potassium chlorate, each	125 Gm.
Water	1,000 Gm.
Boil till salts are dissolved.	
Solution B:	
Aniline hydrochloride	150 Gm.
Water	1,000 Gm.
or:	
Aniline	120 Gm.
Hydrochloric acid	180 Gm.
Water	1,000 Gm.

Two coats of Solution A are applied while hot, the second as soon as the first has dried. Two coats of Solution B are applied, and the wood is allowed to dry thoroughly. Next a coat of raw linseed oil is rubbed in by means of a cloth to give a polish. In the treatment with the oil, the deep black color is partially brought out, but this does not uniformly appear until the table has been thoroughly washed with hot soapsuds. The latter treatment removes superfluous chemicals. To keep the table in condition, it is said to be necessary only to wash off occasionally with soap and water and then to rub with oil. The amount is sufficient for 10 square yards of surface.

FRACTURE OF HIP IN WOMAN AGED FIFTY

To the Editor:—What possibility of walking may be promised in a case of intracapsular fracture at the hip with nonunion? This fracture, in a woman in the fifties, was immediately at the junction of the head and neck of the femur, treated by a Steinmann pin and extension and internal rotation. No union occurred, and when absorption of the neck was noted to begin in ten weeks the patient was returned home as she did not wish open operation. There is now 3 inches shortening and 75 per cent normal active movement. Will she be able to bear weight and walk, and when should she start weight bearing or what treatment is indicated? Please omit name.

M.D., New York.

ANSWER.—A woman in the fifties with an ununited fracture of the neck of the femur and 3 inches of shortening should certainly have an operation performed if she is a reasonably good surgical risk. A Whitman reconstruction would enable her to be up and about much earlier than a bone graft or a Brackett operation but would result in slightly more shortening than the other methods.

If no operation is accepted, she can begin to bear weight at once, using crutches and gradually increasing the time and amount of weight bearing. The ultimate shortening will be 3½ or 4 inches, and the hip joint usually remains quite painful. The body weight is borne by the capsule and ligaments, like a sling, and walking is difficult and unstable, with a marked limp. A high-soled shoe or a metal patten must be used to equalize the length of the legs.

The late result of a nonunion therefore is extremely unfavorable and every effort should be made to obtain the consent of the patient to an open operation.

POISONING FROM COMPOUND SOLUTION OF CRESOL FOLLOWING UTERINE INJECTION

To the Editor:—I wish to secure some information regarding the toxic effect of cresylic acid, which is commonly used and sold under the trade name of lysol, particularly in connection with the absorption of this substance through the uterus when injected to produce an abortion. In this case the solution was injected through the uterus by catheter to produce an abortion. The patient was delirious and unconscious within half an hour and died two days later without regaining consciousness. The theory, however, for the death of this woman was that cresylic acid was absorbed directly into the blood stream in this way: As soon as the solution found its way into the cavity of the uterus, the uterus would make an attempt to expel it in the way of contraction of the elastic fibers of the uterus; then, on the rebound, part of the placental tissue would be detached from the uterine wall and the large veins through which the young fetus is being fed and nourished would suck in the solution, and in that way it would get into the blood stream. This is a rather unusual occurrence and I would like full information regarding the possibility of this occurring. I am of the opinion that the girl died not from the condition as stated but from poisoning due to taking emmenagogues. At autopsy in this case the stomach of the patient was found to be perforated, probably the result of autodigestion. Could you advise me how soon this would occur after death and in what percentage of autopsies autolysis of the stomach occurs within forty-eight hours of death.

LOUIS PANCARO, M.D., Sudbury, Ont.

ANSWER.—In view of the circumstances described in this case the possibility of poisoning from compound solution of cresol following intra-uterine injection cannot be denied. Witthaus and Becker (Medical Jurisprudence, Forensic Medicine and Toxicology, ed. 2, **4**:1187, 1911) state that they have collected the reports of eleven poisonings by uterine irrigation with five deaths; in three cases the irrigation was made to produce abortion and in one case death occurred. No emmenagogues give rise to symptoms like those described.

The stomach may digest itself more or less under many different conditions. The digestion may start almost at once after death, especially in the posterior wall of the fundus and at the junction with the esophagus, because those parts ordinarily come in immediate contact with the gastric juice. Naturally, the state of secretory activity at the time of death is important. Self digestion is favored by warm weather. The entire thickness of the wall of the stomach may be digested and the process may even extend to neighboring organs. Just how quickly and how extensively digestion may occur cannot be stated in definite terms, because the factors involved are subject to great variation.

PORTAL CIRRHOSIS WITH ASCITES

To the Editor:—1. How frequent are spontaneous remissions in decompensated portal cirrhosis without treatment? 2. Can the current high carbohydrate diet alone cause disappearance of the ascites? 3. Do you know of any instances in which the xanthine group of diuretics used alone, notably theocalcin, have caused the disappearance of the ascites?

BENJAMIN J. MACCHIA, M.D., Jersey City, N. J.

ANSWER.—1. Spontaneous remissions do occur but far too infrequently to afford any basis for statistical data. Dense adhesions may be found resembling those of a Talma operation without any history indicating when the inflammatory processes occurred. Adhesions may follow repeated tappings, resulting in a remission.

2. A high carbohydrate diet is of great advantage to such patients, but there is no reason to suppose that it could possibly cause a remission of the ascites.

3. There are no reported instances available in which the xanthine group of diuretics used alone have caused the disappearance of the ascites. In a case of cardiac decompensation with what may be considered a cardiac cirrhosis of the liver, it is conceivable that one of these diuretics might effect some improvement, although it is very doubtful.

EFFECTS OF INSULIN ON SERUM

To the Editor:—What are the effects, if any, of insulin on the blood serum in vitro? I would appreciate any information you can give me on this subject. Please omit name.

M.D., New York.

ANSWER.—There is no generally accepted action of insulin on blood serum in vitro.

Lundsgaard and Holbøll (*J. Biol. Chem.* **62**:453 [Dec.] 1924, **70**:71 [Sept.] 1926) reported that insulin and finely minced muscle tissue acting together change the optical rotation of dextrose without altering its reducing power; i. e., the mixture converts dextrose into a new form.

Bierry and Moquet (*Compt. rend. Soc. de biol.* **93**:322 [July 10] 1925, abstr. THE JOURNAL, Oct. 17, 1925, p. 1259) found that the spontaneous disappearance of dextrose and phosphates from the blood in vitro was accelerated by the addition of insulin.

SUBACUTE BACTERIAL ENDOCARDITIS

To the Editor:—Kindly let me know who was the first one who brought out the diagnosis of "subacute bacterial endocarditis (septic)," caused by Streptococcus viridans. Were there ever reported any cases that were cured, and if so, what was the treatment? How many cases were cured, if any? Somebody has said that Dr. Libman and Dr. Baird from Mount Sinai Hospital, New York, were the first who discovered that disease. Dr. Harlow Brooks, it was said, asserted that he cured six cases. Out here in Boston I spoke to several cardiologists and none know of any cures or have heard of any cures.

BERNARD ZUCKERMAN, M.D., Dorchester, Mass.

ANSWER.—It is hard to give any one man the credit for bringing out the diagnosis of subacute endocarditis. Prolonged forms of endocarditis were described by Jaccoud as early as 1882, by Osler in 1885, and by numerous other authors in subsequent years. Schottmüller described it as endocarditis lenta in 1910, and the disease is occasionally referred to by his name; he deserves a great deal of credit for calling attention to the subacute form.

There have been several cures reported which have stood the test of time. It is possible that this number would be increased by earlier diagnosis in the milder forms. It is possible also that several very mild forms have recovered without being diagnosed.

There is no specific treatment available, and rest and time are still the chief factors. The correspondent is referred to Studies on Bacterial Endocarditis by William S. Thayer, *Johns Hopkins Hospital Reports*, 1926, where treatment was discussed on page 168, and to Dr. Libman's report appearing in the *Transactions of the Association of American Physicians*, 1933, page 44.

It would be much better to go through these articles and others to which references will be found than to rely for information on such a short response as can be given here.

DIFFERENTIAL DIAGNOSIS OF MYASTHENIA GRAVIS

To the Editor:—A man, aged 33, 5 feet 11 inches (180 cm.) in height, of large boned type, 205 pounds (93 Kg.) in weight, complains of excessive fatigue. He is emotionally stable. The weight was 230 pounds (104 Kg.) four months ago, at which time he was definitely conscious of overweight and had the beginning of his fatigue. By diet and exercise the weight was gradually dropped to its present level. It seemed that after his weight began to drop below 220 pounds (100 Kg.) his fatigue progressively increased. Now he complains of being tired at all times and at the end of the day (he is an office worker) he can barely keep on his feet and he looks it. The blood pressure is normal, the basal metabolism is —5 per cent (checked twice by different individuals and records taken one month apart) and the blood sugar is 80. Everything else is normal and I have had my figures checked by two good internists. Thyroid was suggested for a try-out and I gave 2 grains (0.13 Gm.) of a standard preparation three times daily for four weeks. This had no apparent effect on the fatigue but did increase perspiration and slightly accelerated the weight loss. The patient says he does not seem to have much choice: that when his weight is way up he feels "puffed up like a swelling-toad and has a little shortness of breath," and when his weight is where it is now he has fatigue that he cannot overcome. Suggestions will be greatly appreciated. Please omit name.

M.D., Virginia.

ANSWER.—The data given are far too meager on which to base a diagnosis. Muscle weakness and fatigability are due to many causes and the differential diagnosis of the various conditions is usually quite difficult. In this case myasthenia gravis, as well as other conditions, for example Addison's disease, should be considered. On the other hand, the condition may be simple fatigability. A suggestive symposium on some of the various forms of myopathy and the results of treatment in the different groups with fatigability was recently presented by Moersch, Boothby, Wilder and their associates (*Proc. Staff Meet., Mayo Clin.* **9**:589 [Oct. 3] 1934) which might furnish suggestions appropriate for this patient.

RETARDING GROWTH

To the Editor:—Is there any known method of retarding the growth of the long bones? The patient is a girl of 10 in good health. Please omit name.

M.D., New York.

ANSWER.—There is no adequate method for controlling the growth of the long bones in healthy persons. If an anterior pituitary tumor is present, its removal would stop excessive growth. High voltage intensive roentgen therapy might be administered to the pituitary, but so many functions reside in this organ that such procedures might prove harmful in other directions, especially in subsequent gonadal development. Watchful waiting is probably the wisest plan to follow for the present.

Medical Examinations and Licensure

COMING EXAMINATIONS

AMERICAN BOARD OF PEDIATRICS: St. Louis, Nov. 19. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

ARIZONA: Phoenix, July 2. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

CALIFORNIA: San Francisco, July 8-11 and Los Angeles, July 22-25. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

COLORADO: Denver, July 2. Sec., Dr. Harvey W. Snyder, 422 State Office Bldg., Denver.

CONNECTICUT: Hartford, July 9-10. *Endorsement.* Hartford, July 23. Sec., Medical Examining Board, Dr. Thomas P. Murdock, 147 W. Main St., Meriden.

DISTRICT OF COLUMBIA: Washington, July 8-9. Sec., Commission on Licensure, Dr. George C. Ruhland, 203 District Bldg., Washington.

HAWAII: Honolulu, July 8-11. Sec., Dr. James A. Morgan, 48 Young Bldg., Honolulu.

MAINE: Augusta, July 2-3. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton Jr., 192 State St., Portland.

MASSACHUSETTS: Boston, July 9-11. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413 State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS: The examination will be held in all centers where there are Class A medical schools and five or more candidates desiring to take the examination, Sept. 16-18. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEVADA: Reno, Aug. 5. Sec., Dr. Edward E. Hamer, Carson City.

NORTH DAKOTA: Grand Forks, July 2-5. Sec., Dr. G. M. Williamson, 4½ S. 3d St., Grand Forks.

PENNSYLVANIA: *Written.* Philadelphia and Pittsburgh, July 9-11. *Bedside.* Philadelphia, July 12-13. Dir., Bureau of Professional Licensing, Mr. W. M. Denison, 400 Education Bldg., Harrisburg.

RHODE ISLAND: Providence, July 2-3. Dir., Department of Public Health, Dr. E. A. McLaughlin, 319 State Office Bldg., Providence.

SOUTH DAKOTA: Rapid City, July 16-17. Dir., Division of Medical Licensure, Dr. Park B. Jenkins, Pierre.

UTAH: Salt Lake City, July 8-10. Dir., Department of Registration, Mr. S. W. Golding, 326 State Capitol Bldg., Salt Lake City.

WASHINGTON: *Basic Science.* Seattle, July 11-12. *Medical.* Seattle, July 15-17. Dir., Department of Licenses, Mr. Harry C. Huse, Olympia.

WEST VIRGINIA: Clarksburg, July 8. State Health Commissioner, Dr. Arthur E. McClue, Charleston.

California February Examination

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports the written examination held in Los Angeles, Feb. 5-7, 1935. The examination covered 10 subjects and included 90 questions. An average of 75 per cent was required to pass. Sixty-four candidates were examined, 56 of whom passed and 8 failed. The following schools were represented:

PASSED School	Year Grad.	Per Cent
University of Arkansas School of Medicine	(1934)	86
College of Medical Evangelists	(1932) 94.4, (1934)	86.1, 81.9
Stanford University School of Medicine	(1931) 87.9, (1934)	90.6
University of California Medical School	(1932) 83.1, (1934)	84
Univ. of Southern California School of Medicine	(1934) 82.7,	84.2, 85
University of Colorado School of Medicine	(1934)	86.4
George Washington Univ. School of Med.	(1931) 89, (1934)	84.1
Emory University School of Medicine	(1934)	82.7
Chicago Medical School	(1934)	84.3
Northwestern University Medical School	(1934)	83.8*
Rush Medical College	(1934) 78.9,	86.6, 89.1
School of Med. of the Division of the Biological Sciences	(1933)	87.7
University of Illinois College of Medicine	(1934) 87.1,	92.8
Indiana University School of Medicine	(1932)	81.6
University of Louisville School of Medicine	(1934)	82.9
Tulane Univ. of Louisiana School of Med.	(1933) 86.2,	(1934) 84.9
Harvard University Medical School	(1930)	85.7
Tufts College Medical School	(1933)	83.4
University of Michigan Medical School	(1933)	87.7
University of Minnesota Medical School	(1934)	82.4*
Washington University School of Medicine	(1934) 86.8,	89.9
Univ. of Oregon Med. School	(1933) 87.4, (1934) 84.8,	86.1, 86.6, 87.6
Hahnemann Medical College and Hosp. of Philadelphia	(1934)	80.2
Temple University School of Medicine	(1930)	87.4
University of Pennsylvania School of Medicine	(1933)	84.6
Vanderbilt University School of Medicine	(1934)	81.1
Univ. of Santo Tomas College of Medicine & Surgery	(1924)	78
McGill University Faculty of Medicine	(1934)	91.3
Albert-Ludwigs-Universität Medizinische Fakultät, Freiburg	(1925)	80.1†
Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin	(1922) 81.9,† (1934)	76†
Johann Wolfgang Goethe-Universität Medizinische Fakultät, Frankfurt-am-Main	(1924) 78.7,† (1926)	75.8†
Ludwig-Maximilians-Universität Medizinische Fakultät, München	(1927)	78.6†
Universität Heidelberg Medizinische Fakultät	(1922)	85.7†
Universität Köln Medizinische Fakultät	(1921)	75.3†
Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest	(1913)	77.3†
Universität Bern Medizinische Fakultät	(1934)	84†
Faculté Française de Médecine de l'Université de St. Joseph, Beyrouth	(1927)	76.9‡
Zagrebaskog Universiteta Medecinski Fakultet, Yugo	(1927)	80.8

FAILED School	Year Grad.	Per Cent
University of California Medical Department	(1904)	56.8
American Medical Missionary College, Chicago	(1902)	72
University of Oklahoma School of Medicine	(1933)	71.4

Ludwig-Maximilians-Universität Medizinische Fakultät, München	(1931)	39
Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau	(1925)	65.9†
Université de Strasbourg Faculté de Médecine	(1900)	70.6†
Regia Università degli Studi di Modena Facoltà di Medicina e Chirurgia	(1932)	62.1†
Kharkov Medical Institute	(1918)	54†

Ten physicians were licensed by reciprocity and 4 physicians were licensed by endorsement from February 28 to March 21. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Rush Medical College		(1902)	Illinois
Indiana University School of Medicine		(1927)	Indiana
University of Minnesota Medical School		(1922), (1925)	Minnesota
Columbia Univ. College of Physicians and Surgeons		(1920)	New York
Fordham University School of Medicine		(1917)	New York
New York University, University and Bellevue Hospital Medical College		(1908)	New York
University of Buffalo School of Medicine		(1932)	New York
University of Pennsylvania Department of Medicine		(1898)	New York
Meharry Medical College		(1927)	Louisiana

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Rush Medical College		(1926)	U. S. Navy
Harvard University Medical School		(1925), (1929)	N. B. M. Ex.
Jefferson Medical College of Philadelphia		(1925)	U. S. Navy

* This applicant has received an M.B. degree and will receive an M.D. degree on completion of internship.
† Verification of graduation in process.
‡ License has not been issued.

Washington January Report

Mr. Harry C. Huse, director, Department of Licenses, reports the oral and written examination held in Seattle, Jan. 14-16, 1935. The examination covered 7 subjects and included 70 questions. An average of 70 per cent was required to pass. Eighteen candidates were examined, all of whom passed. Six physicians were licensed by reciprocity and 4 physicians were licensed by endorsement. The following schools were represented:

School	PASSED	Year Grad.	Number Passed
Northwestern University Medical School		(1934, 4)*	4
Harvard University Medical School		(1933)	1
Creighton University School of Medicine		(1934)†	1
University of Nebraska College of Medicine		(1933)	1
University of Buffalo School of Medicine		(1934)†	1
University of Rochester School of Medicine		(1934)†	1
University of Cincinnati College of Medicine		(1934)*	1
University of Oregon Medical School		(1933, 4)	4
Medical College of Virginia		(1933)	1
University of Toronto Faculty of Medicine		(1928)	1
McGill University Faculty of Medicine		(1933)	1
Universität Heidelberg Medizinische Fakultät		(1933)‡	1

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists		(1934, 2)	Oregon
St. Louis University School of Medicine		(1932)	Missouri
University of Nebraska College of Medicine		(1932), (1933)	Oregon, Nebraska

School	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Rush Medical College		(1930)	N. B. M. Ex.
University of Buffalo School of Medicine		(1928, 2)	N. B. M. Ex.
University of Oregon Medical School		(1931)	N. B. M. Ex.

* These applicants have received an M.B. degree and will receive an M.D. degree on completion of internship. Licenses have not been issued.
† License has not been issued.
‡ Verification of graduation in process.

Hawaii January Examination

Dr. James A. Morgan, secretary, Board of Medical Examiners, reports the written examination held in Honolulu, Jan. 14-17, 1935. The examination covered 10 subjects and included 55 questions. An average of 75 per cent was required to pass. Nine candidates were examined, 7 of whom passed and 2 failed. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
College of Medical Evangelists		(1934)	84
Stanford University School of Medicine		(1934)	81*
Loyola University School of Medicine		(1934)	80
Tufts College Medical School		(1925)	80
Washington University School of Medicine		(1932)	81, 82
University of Oregon Medical School		(1934)	80

School	FAILED	Year Grad.	Per Cent
Loyola University School of Medicine		(1930) 73, (1934)	75†

* This applicant has completed the medical course and will receive his M.D. degree on completion of internship. License has not been issued.
† Failed in three subjects.

Book Notices

The Content of Motion Pictures. [Combined with] Children's Attendance at Motion Pictures. By Edgar Dale, Research Associate, Bureau of Educational Research, Ohio State University. Cloth. Price, $2.50. Pp. 234; 81. New York: Macmillan Company, 1935.

This volume contains two separate and distinct studies. The study of the content of motion pictures is a most intensive and meticulous one. The writers have gone to untold trouble to arrive at an objective evaluation of what actually is in motion pictures, not what the observer reads into them by virtue of preconceived notions and prejudices. The general themes of 1,500 motion pictures have been studied and, in addition, 115 of the same pictures have been subjected to more intensive analysis, while forty have literally been put under the microscope. Not only general themes have been studied, but locales and settings, leading characters, clothing worn, circumstances of meeting and lovemaking, sex, marriage, and romantic love, crime, vulgarity, recreation, liquor and tobacco, and the goals sought by the leading characters. Besides this the content of newsreels has been studied. In the summary it appears, according to "a balance sheet for motion-picture content," that heavy emphasis has been placed on the life of the upper economic strata, on metropolitan localities, on problems of the unmarried and the young, on problems of love, sex and crime, on the motif of escape and entertainment, on interest appeal to young adults, on the professional and commercial world, present problems in a limited field, comedy foreign characters, diverse and passive reactions, individual and personal goals, crime technic, the romantic and unusual in friendship, "living happily ever after," physical beauty, physical action, and, in the newsreel, sports and trivial happenings. On the contrary, scant attention has been given to life of the middle and lower economic strata, small towns and rural areas, problems of the married, middle aged and old, problems of everyday life, social enlightenment, interest appeal to children and older adults, industry, agriculture, governmental problems, representative foreigners, active and inexpensive recreations, social goals, causes and cures of crime, undramatic and enduring friendship, happy marriages, beauty of character, and, in the newsreels, world news of an intellectual and undramatic character, scientific observations, and pictures of real conditions in the different parts of the world.

The second study deals with children's attendance at moving pictures and gives attention to children's companions in the movies, frequency of attendance, time of attendance, and age composition of the motion picture audience. The conclusion, which could have been anticipated, is that children and youth the country over are frequent patrons of motion picture theaters, that they contribute a larger percentage of the total audience than has been commonly believed, and that therefore the effect of motion pictures is universal and must be faced in a statesmanlike manner by exhibitors, producers, teachers and parents.

The book is an excellent contribution to the store of factual material on which advancement of the motion picture as an educational force must be based.

Glándulas endocrinas y prostitución. Por Dres. J. J. Beretervide y S. Rosenblatt. Prólogo del Prof. Dr. Mariano R. Castex. Paper. Pp. 254. Buenos Aires: Libreria y Editorial "El Ateneo," [n. d.]

The authors have examined 110 prostitutes, apparently thoroughly and with great care, and they have attempted to correlate their observations with the present knowledge of endocrinology. It is difficult to understand why the authors chose to use biologic methods in the study of an economic disease. This alone is sufficient to raise serious doubt as to the fundamental value of the work. It appears further however that, of the few reliable methods available to evaluate the function of the endocrine glands, fewer still have been employed in this investigation. Many if not most of the correlations are purely theoretical; these in turn are based in large part on half-baked theory which the authors have uncritically culled from the vast literature of endocrinology. However, they have assembled a large amount of data; while the significance of the information as related to prostitution is not clear, some of it may possibly be useful for reference.

Economic Problems of Medicine. By A. C. Christie, Professor of Clinical Radiology, Georgetown University Medical School. Cloth. Price, $2. Pp. 242. New York: Macmillan Company, 1935.

Such a book, "written from the viewpoint of the private practitioner of medicine," fills a real need. It is based on the application of the principles of medical ethics to present economic conditions and surveys the economic side of medical education, private practice, the hospital, medical organization and the community. There are chapters on workmen's compensation, health insurance, industrial medicine, medical society experiments, and a final chapter discussing the "Essential Elements in a Comprehensive Plan for Medical Care." It assumes that "if the physician is to fulfil his whole duty to his community he must maintain a position of leadership in everything that pertains to the people's health."

The chapter on "The Physician and the Medical Organization" summarizes the great contribution made to society and to the profession by the American Medical Association and constituent societies. County medical societies are constantly assuming more effective and extensive leadership in all matters concerned with the health of the community. It is not fair to blame physicians for defects in present society. "The causes of this condition are interwoven with the social and economic structure of present-day civilization, and the cure for it must be sought in more equable distribution of the fruits of industry." The origins of health insurance, for example, are due to the fact that "the conditions of modern industry imposed a wage upon laborers so close to a bare subsistence plane that it was only through compulsion that health insurance could be maintained."

The chapter on "New Methods of Medical Care Under Trial or Recommended by Medical Organizations" describes the plans conducted in Alameda, San Diego, Detroit, Washington, D. C., and other places. There is an impartial consideration of the merits and demerits of health insurance and a final summary of the "Essential Elements in a Comprehensive Plan for Medical Care."

It is a work that deserves study by all those who are interested in medical economics. If some criticism must be made to make an impartial review, objection might be raised that too great reliance is placed on the reports of the Committee on the Costs of Medical Care.

Collected Papers of St. Mark's Hospital, London, Including a History of the Hospital: Centenary Volume, 1835-1935. Compiled by the Medical Committee, April 1935. Boards. Price, 30s. Pp. 440, with 96 illustrations. London: H. K. Lewis & Co., Ltd., 1935.

In London in 1835 Dr. Frederick Salmon founded St. Mark's Hospital for the treatment and study of the "diseases of the rectum in all their baneful varieties." The hospital has grown and flourished and now in 1935 the medical committee has published a centenary volume in honor of the completed century of usefulness. This volume contains a series of collected papers written by Dr. Salmon and the staff that has succeeded him. A study of the early papers is interesting indeed. The modern surgeon will find much that is amusing and much that is stimulating. In a paper on stricture Salmon attributes this condition in one of his patients who had just returned from a polar expedition to sitting on the ice, and yet in the same paper there is a good differential diagnosis between the benign and malignant varieties. The antipathy to chloroform is noted in a paper in 1857 because of increased bleeding resulting from relaxation of the sphincter, although it is evident that the anesthetic was used at that time by most surgeons. An article on the injection treatment for hemorrhoids, written in 1888, might have been published by one of the advocates of this form of treatment today; the evils of this injection of strong solutions are denounced in an article published in 1924. The shaping of present ideas concerning the treatment of cancer of the rectum and lower portion of the bowel is seen in the series of articles on this subject from the time the hospital was founded up to the final stage of present-day methods as described in Gabriel's excellent article on one stage perineo-abdominal excision of the rectum in 1934. The book is well printed on glazed paper and has an exceedingly attractive binding simulating the style in vogue a hundred years ago. A short history of the hospital completes the record. The collection will appeal especially to all proctologists or physicians interested in proctology, because in it to a certain extent they will be able to relive the development of their specialty. Physicians interested in medical history will enjoy owning and perusing its contents.

The Romance of Exploration and Emergency First-Aid from Stanley to Byrd. Cloth. Pp. 160, with illustrations. New York and London: Burroughs Wellcome & Co., [n. d.]

This book is frankly an advertising brochure but it is at the same time a charming souvenir and an interesting series of historical highlights on exploration and emergency first aid. When a commercial product has been to all sorts of remote and inaccessible regions, including both poles and the depths of the Dark Continent, it ceases to be a mere commodity and becomes a historical relic. Burroughs Wellcome & Co. has offered first aid and medical equipment to all the important explorers since Stanley. While deprecating the unwillingness of this company to cooperate with efforts of the Council on Pharmacy and Chemistry of the American Medical Association, one can still recognize its contributions, both directly and indirectly through the Wellcome Institute, toward the development of fine pharmaceutical products and compact first aid equipment that will stand the vicissitudes of extreme climates and varied conditions of transportation.

Arzneikunde und Arzneiverordnung: Ein Lehrbuch. Von Prof. Dr. Otto Reisser und Dr. Gert Taubmann. Paper. Price, 12 marks. Pp. 430. Berlin & Vienna: Urban & Schwarzenberg, 1935.

As the authors state in the preface, the purpose of their work is to supplement but not to replace lectures on pharmacology; they did not intend to cover the subject thoroughly, and the reader seeking further information is referred to larger textbooks. Since pharmacology developed into an independent branch of medicobiologic science, it became necessary not only to describe the mode of action of drugs but to discuss the causes of such action. Conforming with this requirement, the authors divided each chapter into two parts, theoretical and practical. Description of the therapeutic application of drugs is preceded by an evolution of its scientific basis; this arrangement of the text reflects the fact that pharmacology stands on the borderline between the theory and the practice of medicine. The authors are familiar with the aversion of the majority of medical students to chemistry; however, the knowledge of composition of drugs is essential and therefore attached charts offer an easy survey of chemical formulas. Certain drugs well known in the United States, such as mercurochrome, acriflavine and mucin, are not mentioned. A statement that ethylene is not a popular anesthetic certainly does not apply to this country. Vermicides have been described in an inadequate manner. Bibliographic references have been omitted because, as stated, the work is not to serve as a textbook. The biologic approach to the subject is highly instructive, the style fluent. One who looks for instruction in prescription writing will be disappointed, but the book offers a well balanced presentation of everything that is modern in pharmacology and deepens the understanding of the physiologic aspect of this science.

Principles of Genetics and Eugenics: A Study of Heredity and Variation in Plants, Animals and Man. By Nathan Fasten, Ph.D., Professor and head of Department of Zoölogy, Oregon State College. Cloth. Price, $2.80. Pp. 407, with 120 illustrations. Boston & London: Ginn & Company, 1935.

For the beginner in the study of genetics and eugenics this is an exceptionally clear, well organized and well written book. From its opening chapter on the scope and need of genetics through various theoretical considerations to the chapters on problems of genetics and eugenics and human betterment, it deals with difficult and complicated questions in a clear and sane manner. It has an ample bibliography containing 213 references, a glossary of twenty-six pages, and an index of sixteen closely printed pages, which add much to the practical value of the volume, as do many helpful diagrams and a few photographs. For the teacher of biology, for the reference library, for the high school, for the junior college and for the general community library, this is an excellent book of elementary principles. While the handling of the subject is sufficiently simple for the beginner, it is not so elementary that the more advanced student will not find the book useful.

Le nodule de la corde vocale. Par Jean Tarneaud, oto-rhino-laryngologiste de l'Hôpital Bellan et du Conservatoire national de musique de Paris. Préface de M. le Professeur Sebileau. Paper. Price, 30 francs. Pp. 139, with 24 illustrations. Paris: Norbert Maloine, 1935.

This is a rather large book, relatively speaking, on small objects, the vocal nodes or singers' nodes, as they are called. Since even the tiniest of nodes are sufficient, in many instances, to ruin the fine quality of the voice and thus bring disaster to the career of the artist, the importance of the subject will justify the detailed discussion of it by Jean Tarneaud. The subject is systematically treated. There is a preface by Professor Sebileau, followed by a chapter on the etiology of the nodule. The author discusses the various theories and feels that a general hypotonicity of the laryngeal muscles always rests at the basis of the formation of the nodes. There follow the chapters on the pathology and the clinical forms, together with symptomatology and diagnosis of singers' nodes. Both the medical and the surgical treatment of the various forms of nodes is discussed, followed by a chapter on the treatment of the voice. A rather complete bibliography concludes the volume. This work is based on many years of clinical experience and investigation, and its perusal will bring much information to the laryngologist interested in this subject. The facts are presented with a clearness that is usually characteristic of French writers, and the illustrations are helpful.

Martini's Principles and Practice of Physical Diagnosis. Edited by Robert F. Loeb, M.D., Associate Professor of Medicine, College of Physicians and Surgeons, Columbia University. From an authorized translation by George J. Farber, M.D. Cloth. Price, $2. Pp. 213, with 30 illustrations. Philadelphia & London: J. B. Lippincott Company, 1935.

Dr. Martini dedicates this book "to teaching the essentials of seeing, hearing, and feeling in their relation to the body in health and disease. The training of these three faculties represents the foundation without which the development of the student of medicine is impossible." Most works on physical diagnosis are so voluminous that they can be used only for reference. This little volume can be carried in the pocket to be used as a guide and ready reference by the student. Chapters are devoted to general examination, to examinations of the respiratory and circulatory system, and to an examination of the abdominal organs. Outlines for history taking and recording of physical examination are appended. The work is concise and thorough and can be highly recommended as a handbook for students.

Women on Their Own. By Olga Knopf, M.D. Edited by Alan Porter. Cloth. Price. $2.75. Pp. 306. Boston: Little, Brown & Company, 1935.

In this book the author discusses the position of woman in America today and all her relationships with men and other women in work, at home, in pleasure and, indeed, in all the aspects of woman's life. She takes up the question of friendships between men and women and between women and other women, paying a considerable amount of attention to the choice of occupation and to the question of marriage as opposed to a career. The book is written with rare understanding and calls attention in case histories to some of the individual problems that have come to her attention. She sees nothing but a broad outlook for woman in the future, with increasing opportunities. Incidentally, Dr. Knopf is a pupil of Alfred Adler and represents the school of individual psychology.

Die Hormonforschung und ihre Methoden. Von Max Reiss, Dr. med., Dr. rer. nat., Privatdozent für pathologische Physiologie an der Deutschen Universität in Prag. Paper. Price, 15 marks. Pp. 415, with 26 illustrations. Berlin & Vienna: Urban & Schwarzenberg, 1934.

This book is apparently intended to be a brief but comprehensive survey of present knowledge of endocrinology, including descriptions of technical methods and an extensive bibliography. It is designed primarily for the use of investigators. Adequate discussion of so detailed a work is impossible in a limited space; this would require a book of no mean proportions in itself. It appears that the author, who is to be commended at least for zeal and industry, has not attained his primary aim. Perusal of any section chosen at random reveals that much essential information has been omitted and that a great deal of non-essential, unconfirmed, unconfirmable and definitely erroneous material has been included. Little effort has been made to distinguish between demonstrated fact and the overwhelming number of fanciful excursions into endocrinology with which the physiologic literature is deluged; this volume will serve at least as much to perpetuate error as it does to present fact. The bibliography (which is extensive but not by any means complete) and the section on technical methods may be of use to investigators; a large part of this book otherwise will be chiefly of historical interest. The format is poor for an encyclopedic work of this kind, so that in many cases a desired subject (perhaps fortunately) is difficult to find. The author has essayed a task that could adequately be accomplished only through the cooperation of many experts; endocrinology is too vast a subject and it is moving at too fast a pace to be successfully reviewed in its entirety by one man.

Leitfaden der Pathologie und Therapie der Kampfgaserkrankungen. Von Dr. med. Otto Muntsch, Oberstabsarzt im Reichsheere. Third edition. Boards. Price, 11 marks. Pp. 132, with 43 illustrations. Leipzig: Georg Thieme, 1935.

The fact that this monograph is in its third edition since 1931 is sufficient evidence of its popularity. The author has attempted to portray particularly the pathologic effects of the poisonous gases used in warfare. Twenty-two beautiful colored plates illustrate the clinical and histopathologic effects on the various organs that may be affected. The seven chapters deal with the history and development of chemical warfare, the general toxicology and chemistry of the most common war gases, the specific pathology and therapy of the effects of war gases, and the late effects and the methods and principles used in combating and treating war gas injury. There is an excellent bibliography from both German and foreign literature and a convenient index. This booklet will be of great service to all pathologists who may deal now or in the future with war gas injuries.

Capitalism Carries On. By Walter B. Pitkin. Cloth. Price, $1.75. Pp. 282. New York & London: Whittlesey House, McGraw-Hill Book Company, Inc., 1935.

Mr. Pitkin is an eminent journalist who has written journalistically about many topics and with great success. He here offers his views as to our future in relationship to the capitalistic system. His book is full of truisms, and he brings himself to the view that the capitalistic system must carry on in the United States, but that, of course, it must modify itself to changing conditions. He looks on the middle class as the hope of humanity, at present being ground to dust through the desperate rich and desperate poor.

Wissenschaftliche Forschungsberichte. Naturwissenschaftliche Reihe. Herausgegeben von Dr. Raphael Ed. Liesegang. Band XIX: Hormone und innere Sekretion. Von Dr. Fritz Laquer, Professor an der Universität Frankfurt. Second edition. Paper. Price, 18 marks. Pp. 368. Dresden & Leipzig: Theodor Steinkopff, 1934.

In preparing the second edition of this well known work (the first appeared in 1928), the author has added some 6,000 references to the bibliography. The format is excellent and the bibliography extensive (but not complete) and well arranged; the book may therefore be useful for reference. However, there are a great many serious omissions from the text (for instance, the fundamental work of Hanson on the parathyroid is not even mentioned) and many of the discussions are uncritical and inaccurate. Much of the work is simply a compilation from the literature. Thus this volume, like so many others on the difficult subject of endocrinology, has a decidedly limited usefulness.

The Modern Method of Birth Control. By Thurston Scott Welton, M.D., F.A.C.S. Cloth. Price, $3. Pp. 159, with illustrations. New York: Walter J. Black, Inc., 1935.

In this book the author offers an ingenious series of charts and a celluloid wheel together with brief explanation of the so-called safe period and practice of this method in relationship to birth control. Dr. Welton is inclined to believe that the method has value. He discusses the literature pro and con emanating from various places. His book should be most useful to those who care to try this method.

L'examen du malade: Guide clinique de l'étudiant et du médecin. Médecine, chirurgie, obstétrique, neurologie et spécialités. Par P. Delmas, professeur á la Faculté de médecine de Montpellier, et al. Paper. Price, 30 francs. Pp. 318. Paris: Masson & Cie, 1935.

The scope of this elegant little book is to serve as a guide for a novice writing histories and examining patients. Nine specialists in their respective lines collaborated in preparing chapters on examination of medical, surgical, obstetric, pediatric, dermatologic, gynecologic, neurologic, otorhinolaryngologic and ophthalmologic cases. These subjects are supplemented by a chapter describing simple laboratory examinations that can be performed by a general practitioner in his office. The compendium is frankly a student's manual for systematic questioning and physical examination of patients and does not pretend to be a diagnostic guide. The subject is presented in a succinct manner, teaching the student to gather and correlate observations and thus arrive at a correct diagnosis. The book is a valuable addition to the library of French students.

The Scientific Basis of Evolution. By Thomas Hunt Morgan, Ph.D., D.Sc., LL.D. Second edition. Cloth. Price, $3.50. Pp. 306, with 45 illustrations. New York: W. W. Norton & Company, Inc., 1935.

The Nobel prize winner in medicine here presents lectures given at Cornell University in the spring of 1931, revised and modified to include newer studies in the field of genetics. His book explains in language understandable, certainly to any physician, the scientific studies that have led to our present views regarding the origin of species and the evolutionary process by which human beings came upon the earth.

Medicolegal

Dental Practice Acts: Circuit Court's Holding of Unconstitutionality Excuse for Licentiate's Violating Act.—Hunt was prosecuted for practicing dentistry in Florida without a license. He brought habeas corpus proceedings and was discharged Jan. 11, 1933, the circuit judge before whom the proceedings were pending holding that the Florida dental practice act was unconstitutional. On appeal, however, the Supreme Court of Florida, division A, March 24, 1933, reversed the circuit court's holding (109 Fla. 248, 147 So. 282); THE JOURNAL (Jan. 20, 1934, p. 239).

Apparently, before the Supreme Court had passed on the constitutionality of the dental practice act but after there was a "circuit court adjudication . . . that the entire law . . . was unconstitutional and void," Williams, a licensed dentist, employed and permitted Hunt to practice dentistry in his offices. After the Supreme Court's decision the board of dental examiners revoked Williams' license, relying on a provision of the dental practice act which authorizes revocation if a licentiate employs, allows, or permits an unlicensed person "to perform unauthorized dental work in his dental office." Williams brought mandamus to review and reverse the board's action. The trial court denied him relief and he appealed to the Supreme Court of Florida, division A.

The dental practice act contains no provision authorizing an appeal to the courts from a decision of the board of dental examiners in revocation proceedings. Apparently some question was raised in view of that fact as to Williams' right to bring mandamus. A state, said the Supreme Court, may validly create a statutory tribunal, such as a board of dental examiners, may grant to it the final determination of whether or not licenses shall be revoked for causes set forth in the law, and may confer on it power to decide legal questions necessarily arising in the course of its proceedings. For such a statute to accord the due process of law guaranteed by the state and federal constitutions, it is not necessary that that statute expressly provide for an appeal to the courts. However, if no method of judicial review is provided for in the statute, mandamus is the appropriate remedy to enable the courts to review the record to ascertain whether or not the tribunal correctly applied the law to the facts of the case and whether or not the record as a whole discloses an abuse of delegated authority or arbitrary or unreasonable action.

In the opinion of the Supreme Court, the board of dental examiners in revoking Williams' license misapprehended the applicable law. The dental practice act in authorizing the revocation of the license of a licentiate guilty of employing, allowing, or permitting any unlicensed person to perform any work in his office which under the provisions of the act can only be legally done by persons holding a license to practice dentistry, the court held, has reference only to a conscious and culpable act on the part of a licentiate amounting to a wilful design to do that which is denounced as unlawful. The provision in question has no reference to an act done by a licentiate in recognition of the supposed correctness of a judicial decision of a competent court declaring the acts prohibited by the statute not to be unlawful because of the alleged unconstitutionality of the statute denouncing those acts. While it would be no defense, the court said, for a dentist to show in justification of his unlawful acts that he deliberately violated a valid statute believing in good faith that the law was unconstitutional, yet it is a defense for him to show that in violating the act, i. e., in employing an unlicensed person to practice dentistry, he placed reliance on the decision of a competent court that the statute was unconstitutional. The Supreme Court held, therefore, that the board of dental examiners was not warranted in law in revoking Williams' license to practice and reversed the action of the board revoking his license.—*State ex. rel. Williams v. Whitman et al., State Board of Dental Examiners (Fla.), 156 So. 705.*

Optometry Practice Acts: Right to Register After Continued Failure to Register Annually.—The North Carolina optometry practice act (C. S. Code, 1931, sec. 6696) requires an optometrist to renew his license and to pay a registration fee to the board of examiners in optometry annually prior to April 1. If he neglects to do so his license may be revoked by the board after notice and hearing, but a license may not be revoked if a holder "shall pay, before or at the time of consideration, his fee and such penalty as may be imposed by the board." Mann, a licensed optometrist, paid the required fee and renewed his license annually until 1913, when he discontinued the practice of optometry. The board never instituted an action to revoke his license. In 1931, when he attempted to renew his license, by tendering the annual fees he had failed to pay since 1913, the board, contending that he had abandoned his license, insisted that he be reexamined. He then instituted proceedings in the superior court, Wake County, to compel the board to renew his license without requiring him to submit to examination. The trial court denied him relief and he appealed to the Supreme Court of North Carolina.

Revocation, said the Supreme Court, being the only method prescribed by the optometry practice act for depriving a licentiate of his right to practice optometry, is the only way a licentiate can be deprived of that right. He is not deprived of his right to practice merely because he has failed to practice over a period of years. Since revocation proceedings were never instituted, Mann is still a licensed optometrist and has the right to have his license renewed on the payment of the delinquent fees and the statutory penalty.—*Mann v. North Carolina State Board of Examiners in Optometry (N. C.), 175 S. E. 281.*

Society Proceedings

COMING MEETINGS

Montana, Medical Association of, Helena, July 2-3. Dr. E. G. Balsam, 208½ North Broadway, Billings, Secretary.

National Medical Association, New Orleans, Aug. 11-17. Dr. C. A. Lanon, 431 Green Street, South Brownsville, Pennsylvania, Secretary.

Northern Minnesota Medical Association, Duluth, Aug. 12-13. Dr. Oscar O. Larsen, Detroit Lakes, Secretary.

North Pacific Pediatric Society, Seattle, August 9-10. Dr. F. H. Douglass, 509 Olive Street, Seattle, Secretary.

Washington State Medical Association, Everett, Aug. 12-14. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.

Wyoming State Medical Society, Lander, Aug. 12-13. Dr. Earl Whedon, 50 North Main Street, Sheridan, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Periodicals are available from 1925 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

189: 601-752 (May) 1935

Clinical Estimation and Significance of Calcium Ion Concentrations in the Blood. F. C. McLean and A. B. Hastings, Chicago.—p. 601.

Failure to Find Pressor and Antidiuretic Substances in Patients with Toxemia of Pregnancy. D. Hurwitz and L. T. Bullock, Boston.—p. 613.

*Histopathology of Hematopoietic Tissues in Hemophilia: Unexplored Field. R. P. Custer and E. B. Krumbhaar, Philadelphia.—p. 620.

Note on Differential Cell Counts of Bone Marrow, with Especial Reference to Estimation of Infrequently Appearing Cell Types. E. B. Krumbhaar and R. P. Custer, Philadelphia.—p. 630.

*Chronic Granulocytopenia of Five Years' Duration with Recurrent Acute Attacks: Case Report. C. L. Stealy, San Diego, Calif.—p. 633.

*Cytoplasmic Changes in Peripheral Neutrophil as Aid in Diagnosis and Prognosis. D. R. Meranze, T. H. Mendell and T. Meranze, Philadelphia.—p. 639.

Mechanisms of Cardiac Rhythm: Illustrated by Unusual Human Electrocardiograms. M. Goodman, New York.—p. 657.

Left Axis Deviation With and Without Heart Disease. S. H. Proger and W. R. Minnich, Boston.—p. 674.

Electrocardiographic Changes Following Administration of Potassium Iodide in Syphilitic Heart Disease. J. M. Bamber, New Orleans.—p. 681.

Auricular Fibrillation in Hyperthyroidism: Influence of Age. H. R. Magee, Santa Monica, Calif., and H. L. Smith, Rochester, Minn.—p. 683.

Observations on Prognosis in Angina Pectoris. A. M. Wedd and R. Eloise Smith, Clifton Springs, N. Y.—p. 690.

Effect of Bacteria on Normal Stomach and on Acute Experimental Gastric Ulcer in Dogs. S. Morrison and M. Feldman, Baltimore.—p. 696.

Blood Glucose Clearance: Its Determination by a Micro-Interval Method: I. Studies in Normal and Diabetic Persons. R. M. McKean, G. B. Myers and E. C. Von der Heide, Detroit.—p. 702.

Thomsen's Disease: Myotonia Congenita. B. I. Comroe, Philadelphia.—p. 714.

Histopathology of Hematopoietic Tissues in Hemophilia.—Custer and Krumbhaar studied three cases of hemophilia; one died as the direct result of hemorrhage, another of a combination of infection and hemorrhage and the third of infection without any relation to hemorrhage. The subjects were of about the same age. The cytology of the bone marrow is presented in detail, especially that of the megakaryocytes, which are generally regarded as the originators of the blood platelets and directly concerned with blood coagulation, the major disturbance in hemophilia. The state of the thrombocyte series in the bone marrow was the striking feature in all three cases. Estimations of the incidence of this series of cells in approximately 12,000 cells per bone were compared with similar estimations in a group of nonhemophilic controls. The differences indicate the need for an estimation covering a much larger number of cells than the usual differential count of 500 or even 1,000 in categories that are sparsely represented. The relative percentage in the three hemophiliac patients was fairly uniform. An average in hemophilia of 57.3 cells of the megakaryocyte series per 12,000 total cells opposed to 29.7 in eight nonhemophilic controls is regarded as significant. The largest percentage of megakaryocytes appeared in the purely hemorrhagic case, the smallest in the purely infectious and a midposition was held by the case in which hemorrhage was a minor factor; the increased incidence of megakaryoblasts, evidence of regenerative activity, was associated with hemorrhage, matched only by the apparently recently hyperplastic femur in the infectious case, in which the increase in young forms was offset by the sparsity of degenerate cells. The morphology of megakaryocytes in this disease does not vary from the normal. The megakaryoblast is seen as a hypertrophic, moderately basophilic cell which may be strictly mononuclear or may exhibit early nuclear polymorphism, nuclear lobes occasionally appearing to lie one on the other; the vague acidophilic granularity is rarely seen in this stage. The normal adult megakaryocyte presents a more or less vesicular nucleus which is multilobated with a sharp perinuclear membrane, fine chromatin strands and prominent nucleoli lying in a large cytoplasmic mass with a pale basophilic background and extremely delicate pink-staining granules. The degenerate cell is characteriezd by a shrunken or faded nucleus and a frayed vacuolated cytoplasm which stains poorly. On four occasions it was possible to demonstrate the so-called "Wright's figures," i. e., cytoplasmic buds of megakaryocytes which extend through the wall of a blood sinus into the lumen, confirming J. H. Wright's observations on the mechanism of platelet formation; two such cells are pictured. Formation of erythrocytes and granulocytes in all three cases conformed strictly to normal standards. Erythropoiesis seemed rather more active in the flat bones than one usually finds except in the severe anemias. No structural abnormality of blood vessels was demonstrated. The accessory blood forming organs showed no significant changes, although an increased prominence of cells of the reticulo-endothelial system was noted in each case; there was no evidence for or against the autochthonous formation of the megakaryocytes seen in the spleen of the first case.

Chronic Granulocytopenia.—Stealy presents a case of chronic primary granulocytopenia which has been under observation for five years. The symptoms, history, physical observations and blood counts during the acute attacks and during the periods of remission present a typical picture of the chronic primary type of the disease without ulceration. On three occasions an increase in neutrophils was noted a few hours before, after or at the same time the total leukocyte count started to fall. The fall of the neutrophil count from this higher point was abrupt and caused a complete reversal of the neutrophil-lymphocyte ratio. It is possible that such an increase in neutrophils may be used as an indicator of an oncoming acute attack. Drugs of the benzine ring were discontinued after the first acute attack in 1929. Pentnucleotide was given in two of the most severe attacks. The rise in the leukocyte and neutrophil count corresponded to the results apparently obtained by its use by Jackson. Only supportive measures were used during other less severe attacks. During the periods of remission various forms of medication have been tried. Concentrated forms of vitamins B and D, in addition to a well-balanced diet, have been given empirically since June 1934. During this time there has been apparent improvement in subjective symptoms and a rise in the general level of the leukocytes and the neutrophil-leukocytes to within normal limits. This line of treatment is being continued on the basis that granulocytopenia may be a deficiency disease in the same way that pernicious anemia is one.

Cytoplasmic Changes in Peripheral Neutrophil.—Meranze and his associates present the subject of toxic cytoplasmic alterations in peripheral neutrophils. These changes have been shown to be of value diagnostically. They are most uniformly found in infections, and probably their greatest value lies in differentiating localized from generalized infections or the development of complications, whether this is a secondary infection or a spread of the initial infection. These changes are most uniformly found in pneumonia, peritonitis, bacteremias and septicemias. The addition of toxic cytoplasmic changes in the neutrophils to the hemogram in which they were previously absent should suggest an added complication. From a prognostic point of view, an increasing degenerative index lends increasing gravity to the outcome. The addition of this examination as a routine to the hemogram is of clinical value, often gives more information than the total leukocyte count and, if followed serially, is often more informative than the Arneth-Schilling shift. No hemogram in infection or in serious disease states is complete without the determination of toxic cytoplasmic changes and their recording in some quantitative scheme, such as Rosenthal's "degenerative index." Cytoplasmic changes in the peripheral neutrophil consist of an alteration of the staining quality of the cytoplasm and its components from a normal eosinophilic pink to a dirty gray or blue and an increase in granulation. In the abnormal neutrophil the cytoplasmic granules are coarse, irregular in distribution, staining a deep blue and oxidase negative. They may be sparse, grouped on one

side, or diffusely scattered over the entire protoplasm. All the neutrophils are not uniformly granulated. In some the granules may be so large that the cell may be mistaken for a basophil. Vacuolization of the cytoplasm is usually observed, giving the cells a moth eaten appearance about the periphery or throughout the cytoplasm.

American Journal of Physiology, Baltimore

111: 483-728 (April) 1935

Utilization of Galactose Following Complete Removal of Liver. J. L. Bollman, F. C. Mann and M. H. Power, Rochester, Minn.—p. 483.

Absorption and Utilization of Carotene and Vitamin A in Choledochocolonostomized Vitamin A Deficient Rats. J. D. Greaves and C. L. A. Schmidt, Berkeley, Calif.—p. 492.

Utilization of Carotene by Jaundiced and Phosphorus Treated Vitamin A Deficient Rats. J. D. Greaves and C. L. A. Schmidt, Berkeley, Calif.—p. 502.

Prolongation of Pregnancy in Rat by Injection of Human Pregnancy Urine Extract. Edith C. Hoopes and Jessie L. King, Baltimore.—p. 507.

Relation of Direct Currents to Linearly Rising Currents as Stimuli. H. A. Blair, Rochester, N. Y.—p. 515.

Metabolic Fate of Galactose in Adult Dogs and Rabbits. J. H. Roe, Washington, D. C., and G. R. Cowgill, New Haven, Conn.—p. 530.

Experimental Fever in Sympathectomized Animals. J. O. Pinkston, Boston.—p. 539.

Distribution of Glucose in Blood. J. M. D. Olmsted, Berkeley, Calif.—p. 551.

Relation Between Heart Rate During Exercise and That of Immediate Postexercise Period. F. S. Cotton, Boston, and D. B. Dill, Sydney, Australia.—p. 554.

Changes in Human Cerebral Blood Flow Consequent on Alterations in Blood Gases. F. A. Gibbs, E. L. Gibbs and W. G. Lennox, Boston.—p. 557.

Effect of Different Sizes of Balloons Inserted in Gut and Changes in Pressure Within Them on Activity of Small Intestine. C. M. Gruber and A. DeNote, Philadelphia.—p. 564.

Experimental Production in Cat of Condition Simulating Pseudobulbar Palsy. O. R. Langworthy and L. C. Kolb, Baltimore.—p. 571.

Spleen, Hemoglobin and Erythrocytes in Nutritional Anemia of the Rat. C. J. Hamre and C. D. Miller, Honolulu, T. H.—p. 578.

Rhythmic Changes in Fetal Liver After Feeding. H. A. Stuart and G. M. Higgins, Rochester, Minn.—p. 590.

Influence of Glycine on Excretion of Creatine and Creatinine. Mildred Adams, M. H. Power and W. M. Boothby, Rochester, Minn.—p. 596.

Effect of Denervation on Sensitivity to Adrenine of Smooth Muscle in Nictitating Membrane of Cat. C. W. Hampel, Boston.—p. 611.

Certain Blood Changes Associated with Physical Exhaustion in Normal Dog. F. W. Schlutz, A. B. Hastings and Minerva Morse, Chicago.—p. 622.

Standards for Predicting Basal Metabolism in Immediate Preadult Years. Marian E. Stark, Madison, Wis.—p. 630.

Nature of Action Potentials in Frog's Gastrocnemius Muscle. J. A. E. Eyster, F. Maresh and M. R. Krasno, Madison, Wis.—p. 641.

Inhibition of Heart Under Anaerobic Conditions. W. E. Garrey and J. T. Boykin, Nashville, Tenn.—p. 649.

Local Variations in Normal Polymorphonuclear Count in Man. J. MacLeod, New York.—p. 655.

Functional Studies of Nervous System in Experimental Beriberi. C. F. Church, with assistance of Jean Warren and Claire F. Freeman, Philadelphia.—p. 660.

Influence of Electrolytes on Respiration in Nerve. T. H. Chang, M. Shaffer and R. W. Gerard, Chicago.—p. 681.

Influence of Blood Constituents on Oxygen Consumption in Nerve. M. Shaffer, T. H. Chang and R. W. Gerard, Chicago.—p. 697.

Mechanism of Arsenite Action on Medullated Nerve. F. O. Schmitt and R. K. Skow, St. Louis.—p. 711.

Annals of Internal Medicine, Lancaster, Pa.

8: 1247-1386 (April) 1935

*Influence of Dietetic and Other Factors on Swelling of Tissues in Arthritis: Preliminary Report. C. W. Scull and R. Pemberton, Philadelphia.—p. 1247.

Some Observations on Mercurial Diuretics. J. H. Crawford and W. S. McDaniel, Brooklyn.—p. 1266.

Cutaneous Tuberculosis and General Medical Diagnosis. F. E. Senear, Chicago.—p. 1274.

Atypical Hay Fever Seasons: Their Significance in Treatment. S. M. Feinberg, Chicago, and O. C. Durham, North Chicago, Ill.—p. 1282.

Sensory Changes and Reflexes in Juvenile Paretic Neurosyphilis. W. C. Menninger, Topeka, Kan.—p. 1287.

Basophilic Adenoma of the Pituitary: Report of Case of "Pituitary Hypertension," Terminating in Cerebral Apoplexy. B. A. Gouley, Philadelphia.—p. 1294.

Artificial Pneumothorax Therapy. W. C. Pollock, Denver.—p. 1302.

Closed Intrapleural Pneumolysis. J. H. Forsee, Denver.—p. 1309.

The Present Status of the Problem of "Rheumatism:" Review of Recent American and English Literature on "Rheumatism" and Arthritis. P. S. Hench, Rochester, Minn.; W. Bauer, Boston; A. A. Fletcher, Toronto; D. Ghrist, Los Angeles; F. Hall, Boston, and P. White, Charlotte, N. C.—p. 1315.

Influence of Diet on Edema in Arthritis.—Scull and Pemberton direct attention to the fact that convalescence from arthritis is frequently characterized by a reduction of swelling of the soft tissues, particularly evident though rarely conspicuous in the hands, and concurrent with a diminution of pain and increasing range of motion of the joints. Approximate water balance estimations indicate that a net loss of water from the body accompanies a subsidence of swelling of tissues, pain and limitation of motion. Disturbances of water distribution in tissues constitute significant factors in the dynamic pathologic changes of the rheumatoid syndrome. The administration of several types of low calory diets has been shown to be associated with a net loss of water and with clinical improvement. Dehydrating diets, adequate in calories, high in protein, low in fluid and high in fat induced a net loss of water from arthritic patients with clinical evidence of improvement, and the authors suggest that the relative increase of fat and protein metabolized on low calory diets exerts a significant influence in the striking clinical results frequently achieved. Recumbent rest is considered as acting, in part, by favorably influencing a shift of fluid from the tissues to the blood and lymph channels. A negative water balance contributes to recovery from both atrophic and hypertrophic arthritis. This suggests that both types of arthritis arise in part from similar or comparable premises and, further, that rigid restriction of many therapeutic measures, especially the foregoing, to one type alone is unwarranted. Dehydrating measures alone do not constitute a therapeutic escape from arthritis. Vigorous sweating, purgation or diuresis have long been known to be of only limited value and even dangerous. So far as changes in the distribution of tissue fluids in arthritis may be desirable, they should be achieved by the more sustained and "physiologic" influence and measures discussed.

Annals of Medical History, New York

7: 201-310 (May) 1935

Dr. Benjamin Winslow Dudley. W. O. Bullock, Lexington, Ky.—p. 201.

The Medical School at Padua and the Renaissance of Medicine. A. Castiglioni, Padua, Italy.—p. 214.

Short Review of Development of Medical Education and Schools of Medicine. Eileen R. Cunningham, Nashville, Tenn.—p. 228.

Birth of the First Independent Proprietary Medical School in New England, at Castleton, Vt., in 1818. F. C. Waite, Cleveland.—p. 242.

Claude Bernard as a Dramatist. J. M. D. Olmsted, Berkeley, Calif.—p. 253.

Short History of Iron Therapy. L. J. Goldwater, New York.—p. 261.

Madstones, with an Account of Several from Virginia. W. B. Blanton, Richmond, Va.—p. 268.

Fact and Fiction in Names and Titles of Paracelsus. R. E. Schlueter, St. Louis.—p. 274.

History of Jewish Physicians in the United States Up to About 1900. S. M. Simon, New York.—p. 285.

Robert Koch (1843-1910): American Tribute: Part II. L. Brown, Saranac Lake, N. Y.—p. 292.

Archives of Neurology and Psychiatry, Chicago

33: 917-1142 (May) 1935

Crossed Atrophy of Cerebellum: Pathologic Study of Case. G. B. Hassin, Chicago.—p. 917.

Studies in Multiple Sclerosis: IV. "Encephalitis" and Sclerotic Plaques Produced by Venular Obstruction. T. J. Putnam, Boston.—p. 929.

*Dermoid Tumors of Spinal Cord: Report of Four Cases, with Observations on a Clinical Test for Differentiation of Source of Radicular Pains. H. C. Naffziger and O. W. Jones Jr., San Francisco.—p. 941.

*Parenchymatous Cortical Cerebellar Atrophy (Subacute Cerebellar Encephalitis). H. L. Parker and J. W. Kernohan, Rochester, Minn.—p. 959.

Significance of Panic and States of Consciousness in Grasping Movements. A. M. Rabiner, Brooklyn.—p. 976.

Mental Symptoms in Cases of Tumor of Frontal Lobe. I. Strauss and M. Keschner, New York.—p. 986.

Dementia Paralytica: Results of Treatment with Malaria in Association with Other Forms of Therapy. H. C. Solomon and S. H. Epstein, Boston.—p. 1008.

Respiratory Metabolism of Excised Brain Tissue: II. Effects of Some Drugs on Brain Oxidations. S. B. Wortis, New York.—p. 1022.

Caffeine Sodiobenzoate, Sodium Iso-Amylethyl Barbiturate, Sodium Bromide and Chloral Hydrate: Effect on Highest Integrative Functions. H. G. Wolff, New York, and W. H. Gantt, Baltimore.—p. 1030.

Clinical Test for Intradural Spinal Lesions.—Naffziger and Jones call attention to a clinical test that has enabled them to differentiate radicular pain of intradural origin from extradural pain of radicular type. In cases of gross space-consuming lesions within the spinal canal, radicular pain commonly is caused by tension or traction on sensory roots. In lesions of the cauda equina, pain, particularly of the bilateral sciatic type

produced by coughing, straining, sneezing or muscular movements, has long been known to be characteristic. It is well known, however, that muscular movements, straining or any sudden effort, such as coughing or sneezing, may give rise to pain in patients with sciatica resulting from lumbosacral, sacroiliac and other lesions of extradural origin. When the test is performed the patient is placed in a comfortable position, and when he is free from pain the cervical veins are compressed as in the Queckenstedt test. As the intracranial and intraspinal pressure above the level of a block is raised, the typical radicular pain is reproduced because the tumor or other gross lesion presumably is displaced sufficiently to cause traction on or irritation of a nerve root. Although the radicular pain most often is reproduced on compression of the jugular and other cervical veins, in certain instances, depending presumably on the direction in which the tumor dislocates most readily, such pain may be experienced only on the sudden release of the jugular compression. It is easy to understand the dislocation of a pedunculated neurofibroma with its traction on a sensory root occurring as a result of this test, but in addition the test was found to be positive in association with other gross lesions, such as spongioblastoma multiforme of the conus medullaris, hemangio-endothelioma involving the cauda equina and conus medullaris, and arachnitis serosa circumscripta of the fourth thoracic segment. If the test is positive, it furnishes presumptive evidence of the presence of a gross, space-consuming intradural lesion. A positive reaction may not be obtained in all persons with tumor of the spinal cord. Another sign of diagnostic value was present in two of the authors' four cases. When the needle encountered dural resistance at the time of lumbar puncture, the patient experienced excruciating pain. In one case the fluid was obtained on puncturing in another interspace, but in the other case, regardless of the interspace used, pain was so intense that it was necessary to employ general anesthesia in order to complete the puncture. In each instance a tumor was found anterior to the roots of the cauda equina, displacing the roots posteriorly against the dura so that they were immobile and under tension. The slightest pressure on the dura irritated the immobile nerve roots, causing pain. In a suspected case of tumor, therefore, severe pain produced during a lumbar puncture is suggestive. In two of the cases reported the slow-growing nature of the tumor produced definite bony alterations that were demonstrated roentgenographically.

Cortical Cerebellar Atrophy.—Parker and Kernohan discuss the possibility of a virus disease with a special affinity for the Purkinje cells, which attacks younger patients, runs a much more rapid course and is associated with general weakness and prostration. This disease shows certain analogies to chronic anterior poliomyelitis, to Parkinson's syndrome of epidemic encephalitis and to the disease known as "louping ill" in animals. The case of Murri and that previously reported by them may fall into this category; their present case suggests even more strongly the possibility of a virus infection. The clinical picture was that of some general noxious condition that caused the patient to lose strength and weight and that also had a specific influence on his cerebellar system, in that it was conspicuously injured. The whole illness from onset to death lasted almost twelve months. It was insidious in onset and steady in progress and seemed in general to present a fairly clear cut clinical syndrome. Microscopically there were processes still active, which with good reason could be called encephalitis. The lesion in the hemispheres was more advanced and thus possibly older than that in the vermis, where signs of encephalitis were most marked. Theoretically the perivascular collections of cells might be the result of tissue degeneration, but the other observations suggest an inflammatory cause for the degeneration of the cells. The reactions in the cerebellum corresponded to those associated with virus disease in general and here were limited to the cerebellum alone, particularly to the Purkinje cells; even the fiber tracts to and from the cerebellum were intact. In suggesting a virus as the etiologic agent in some of these cases of atrophy of the cerebellum, the authors recognize that they depended on histologic signs alone. Nevertheless, considering the clinical course and the pathologic changes, at least in their present case, they think that there is sufficient evidence to suggest strongly that the condition is a virus disease. The two other cases, one described by them and the other by Murri, could also fit into this category by reason of the subacute nature of the process. The remaining eleven cases, by reason of the chronicity of the disease, do not justify such a hypothesis, unless one accepts a chronic type of virus disease and rejects all other possibilities.

Canadian Public Health Journal, Toronto

26: 157-208 (April) 1935

The New Canadian Death Certificate. W. R. Tracey, Ottawa, Ont.—p. 157.
The Physician and the New Canadian Death Certificate. R. D. Defries and A. H. Sellers, Toronto.—p. 160.
The Development of Public Health in New Brunswick. W. Warwick, Fredericton, N. B.—p. 168.
Problems of the Medical Officer of Health in Urban Sanitation. L. A. Pequegnat, Toronto.—p. 176.

Illinois Medical Journal, Chicago

67: 389-484 (May) 1935

Malignant Tertian Malaria: Report of Small Epidemic. H. J. Ireland and M. G. Bohrod, Peoria.—p. 445.
Pyelocystitis: Diphasic Strains of Bacteria Appearing in Urine. C. C. Saelhof, Chicago.—p. 450.
Successful Extensive Resections of the Small Intestine. P. W. Greeley, Winnetka, and P. E. N. Greeley, Waterman.—p. 451.
Hallux Valgus (Bunions). P. H. Kreuscher and H. Kelikian, Chicago.—p. 453.
Value of Blood Findings in Prognosis of Acidosis in Diabetes. R. M. Parrott, Oak Park.—p. 457.
Dosage of Histamine for Stomach Tests. E. E. Seidmon and H. Necheles, Chicago.—p. 458.
Congenital Absence of Uterus and Vagina: Case. H. O. Veach, Kewanee.—p. 459.
Renal Dwarfism. L. F. Miller and G. C. Coe, Chicago.—p. 459.
Modern Advancement in Serology. H. Phillips, Anna.—p. 461.
Treatment of Carbuncles on Back of the Neck. E. B. Williams, Chicago.—p. 467.
Treatment for Vaginal Trichomoniasis. O. W. Tulisalo, Rockford.—p. 467.
Liver Abscess (Amebic) in Boy Aged Seven Years. M. H. Streicher, Chicago.—p. 468.
The Medical Aspect of Chronic Arthritis. S. J. Lang, Evanston.—p. 470.
*The Importance of Nephrosclerosis in Treatment of Urinary Obstruction. G. Milles, Chicago.—p. 473.
Pollen Contamination of the Air in Illinois. O. C. Durham, North Chicago.—p. 475.
Noise. E. Podolsky, Brooklyn.—p. 478.

Nephrosclerosis and Urinary Obstruction.—Milles prefers the term benign nephrosclerosis or benign arteriolar sclerosis of the kidneys to chronic interstitial nephritis. The condition is primarily due to an arteriolar spasm of the renal vascular bed which may be local or part of a general condition and of the nature of a fatigue reaction. As the process continues, hypertrophy or degeneration of the vessel wall, or both, results. Thus the muscular elements in the media hypertrophy, the intima proliferates and finally a gradually developing ischemic degeneration sets in. The resulting hyaline changes and fibrosis in the intima, media and adventitia produce more or less complete occlusion of these important vessels. The rate of the process varies but is usually extremely slow. With the gradual interference with the blood supply the tubular epithelial cells undergo slowly progressive atrophic degeneration and the less differentiated and metabolically more sluggish cells of the connective tissue proliferate. Concomitantly, the glomerular tufts degenerate and are replaced by hyaline scar tissue. The result is obliteration of a percentage of the glomeruli, atrophy of the tubules and proliferation of the interstitial connective tissue. Round cell infiltration in the interstitial tissue occurs secondarily as an incidental process, the result of either degenerative changes or the acute changes occurring with renal decompensation. In the presence of a slowly progressive process which involves destruction of glomeruli the surviving glomeruli must function twice as actively in order to maintain renal compensation. Any additional strain placed on the kidneys may dissipate the reserve, and then actual renal decompensation ensues. Reduction in the available oxygen, such as would result from heart failure with its attendant circulatory failure and drop in blood pressure, would accomplish this. Similarly, mechanical obstruction to the outflow of urine, such as occurs in prostatic hypertrophy with obstruction, places an added burden on the urine secreting mechanism.

Johns Hopkins Hospital Bulletin, Baltimore

56: 183-246 (April) 1935

Neuromyelitis Optica: Anatomic-Pathologic Study of One Case: Clinical Studies of Three Additional Cases. F. B. Walsh, Baltimore.—p. 183.
Urgency and Frequency of Micturition in Neurologic Disease. O. R. Langworthy and L. G. Lewis, Baltimore.—p. 211.
Statistical Survey of One Hundred and Eighty-Six Cases of Manual Removal of Placenta. C. H. Peckham, Baltimore.—p. 224.
Cardiac Arrhythmia in Experimental Suprarenal Insufficiency in Dogs. W. M. Nicholson and L. J. Soffer, Baltimore.—p. 236.

Journal of Urology, Baltimore

33: 427-520 (May) 1935

Bilateral Renal Carcinomas. A. Sprenger and M. G. Bohrod, Peoria, Ill.—p. 427.
*Tissue Changes in Mixed Tumors of Kidney After Roentgen Therapy. A. E. Bothe, Philadelphia.—p. 434.
Primary Tumor of the Ureter: End Results in Three Cases. A. W. Hunter, Vancouver, B. C.—p. 443.
Autonephrectomy with Subsequent Extrusion of the Kidney Through an Emergency Nephrotomy Wound. W. H. Haines, Philadelphia.—p. 464.
Foreign Body of Paraffin in Urinary Bladder Removed with Xylol as Solvent: Case Report. J. H. Turner, Houston, Texas.—p. 471.
Vesical Diverticula. J. A. H. Magoun, Toledo, Ohio.—p. 474.
Nonpurulent Urethritis in Women: "Granular Urethritis—Cystalgia." J. K. Ormond, Detroit.—p. 483.
Suburethral Abscesses and Diverticula in the Female Urethra. H. D. Furniss, New York.—p. 498.
Cautery Punch Operation for Removal of Obstructive Lesions at Vesical Orifice in Women and Children. J. R. Caulk and J. F. Patton, St. Louis.—p. 504.

Changes in Mixed Tumors of Kidney After Roentgen Therapy.—Bothe studied two mixed tumors of the kidney that were irradiated before surgical removal in order to determine the tissue changes. Although both patients died within a short time following the removal of the tumor, the microscopic studies show very definite change of the tissue in the tumors, which was undoubtedly due to the irradiation. The embryonal sarcomatous cells of mixed tumors of the kidney are radiosensitive. The epithelial cells in mixed tumors of the kidney are radioresistant. When mixed tumors of the kidney are irradiated before surgical removal, the tumor is usually reduced in size. The reduction in size of the tumor following irradiation appears to be dependent on the amount of embryonal sarcomatous tissue. Irradiation of the tumor does not completely destroy all the malignant cells. Mixed tumors of the kidney should always have sufficient preoperative irradiation. They should always be removed after irradiation. Surgical procrastination results in subsequent growth and metastasis.

Laryngoscope, St. Louis

45: 243-324 (April) 1935

Proper Rôle of Vaccines in Chronic Infection of Upper Air Passages. M. Solis-Cohen, Philadelphia.—p. 243.
Tuberculosis of the Larynx. C. Hirsch, New York.—p. 269.
History of Surgical Treatment of Otogenic Abscess of the Brain. L. M. Davidoff, New York.—p. 295.
Chlorine Gas Burns of Inside of Right Cheek, Anterior and Posterior Pillars, Right Side of Soft Palate, Posterior Pharyngeal Wall, Larynx, Trachea and Bronchi. P. S. Stout, Philadelphia.—p. 307.
Septum Forceps. M. M. Cullom, Nashville, Tenn.—p. 309.
Graduated Nasal Probe: Sphenopalatine Needle. R. A. Luongo, Philadelphia.—p. 311.

Minnesota Medicine, St. Paul

18: 269-350 (May) 1935

Value of Cholecystography by Oral Method, with Analysis of One Hundred and Eighty-Nine Operated Cases. E. Schons, St. Paul.—p. 269.
Postoperative Pulmonary Complications and Postoperative Use of the Trendelenburg Position. H. K. Gray, Rochester.—p. 273.
Study of Tuberculosis in Families. G. A. Hedberg, Nopeming.—p. 276.
Factors Contributing to Further Reduction of Tuberculous Infection. F. L. Jennings, Oak Terrace.—p. 280.
Management of Kidney Injuries, with Especial Reference to the Value of Intravenous Pyelography. T. H. Sweetser, Minneapolis.—p. 283.
Late Toxemias of Pregnancy. L. A. Lang, Minneapolis.—p. 287.
*The Care of the Allergic Child. A. V. Stoesser and E. Shaperman, Minneapolis.—p. 292.

The Allergic Child.—Stoesser and Shaperman review the treatment carried out in 141 children having such allergic disorders as eczema, coryza, hay fever, asthmatic bronchitis and bronchial asthma, urticaria and gastro-intestinal allergy. They belong to that section of a newer classification of allergy entitled natural or atopic hypersensitiveness characterized by a strong hereditary tendency. A large number of patients received relief. In obtaining this result, no elaborate methods of diagnosis were used, but instead a few rather simple procedures were followed. Treatment involved the thorough removal of the offending foods from the diet, or the irritating inhalants from the child's environment. Pollen allergy responded well to proper and careful desensitization. A small number of patients required surgical treatment to obtain relief. Success depended on the avoidance of all haste in the diagnosis and treatment. Delays in relieving the child were often necessary because histories had to be retaken, cutaneous tests repeated and trial diets rearranged. A rather exhaustive search was conducted for the offending allergen or allergens, and an effort was made to avoid placing the patient on some form of drug therapy, thereby dismissing the search.

Oklahoma State Medical Assn. Journal, McAlester

28: 157-198 (May) 1935

Present Trends in Medical Education. L. J. Moorman, Oklahoma City.—p. 157.
Treatment of Liver Diseases. D. D. Paulus, Oklahoma City.—p. 161.
General Consideration of Acute Intestinal Obstruction. H. M. Trussler, Indianapolis.—p. 164.
The Physiology of the Endocrine Glands. P. A. Staley, Ponca City.—p. 169.
The Use of Dilaudid in General Practice. C. M. Bassett, Cushing.—p. 178.

Pennsylvania Medical Journal, Harrisburg

38: 465-568 (April) 1935

Some Diseases of Oral Mucosa. H. Fox, New York.—p. 465.
Malignant Tumors of Kidney. L. P. Gibbons, Scranton.—p. 471.
Electrocoagulation for Retinal Detachment: Motion Picture Demonstration. L. C. Peter, Philadelphia.—p. 473.
Retinal Detachment: Operative Results in Series of Twenty-Two Consecutive, Unselected Cases. B. F. Baer Jr. and J. S. Shipman, Philadelphia.—p. 475.
Hyperthyroidism Treated by Irradiation: Report of Cases. J. J. Quiney, Easton.—p. 480.
Roentgen Therapy versus Surgery in Treatment of Hyperthyroidism. J. T. Farrell Jr., Philadelphia.—p. 484.
Fracture of Body of Calcaneum. T. A. Outland, Sayre.—p. 487.
Observations on Metabolism and Treatment of Undernutrition. J. M. Strang, Pittsburgh.—p. 493.
Management of Vertex Occipitoposterior Position. R. E. Nicodemus, Danville.—p. 497.
Hypochloremia. G. M. Piersol and W. G. Karr, Philadelphia.—p. 500.
Treatment of Chronic Suppurative Otitis Media. K. M. Day, Pittsburgh.—p. 505.
Survey of State Emergency Medical Relief During Its First Year of Operation as Seen by the Physician. M. Behrend, Philadelphia.—p. 508.
State Emergency Medical Relief as Seen from an Administrative Point of View. H. A. Miller, Harrisburg.—p. 510.
Organized Medicine and Social Insurance. F. F. Borzell, Philadelphia.—p. 513.

Philippine Islands Med. Association Journal, Manila

15: 177-238 (April) 1935

Biologic Control of Anopheline Vectors of Malaria in the Philippines: Preliminary Report. A. Ejercito, Manila.—p. 177.
Have the Filipinos Increased in Size in Last Twenty Years? I. Concepcion, Manila.—p. 195.
Physical Peculiarities of Aged Filipinos. G. T. Lantin, Manila.—p. 204.
Bacteriophage in Identification of Bacteria: I. Identification of Shigella Dysenteriae and Eberthella Typhi by Use of Their Corresponding Bacteriophages. A. Pio de Roda, Manila.—p. 209.
Trial of High Fat Diet and Fixation Abscess in Lepra Reaction. M. C. Cruz, Culion.—p. 214.
Observations on Some Effects of Intradermal Injection of Certain Esters of Different Degrees of Saturation. M. Lagrosa and J. Ignacio, Culion.—p. 220.

Psychiatric Quarterly, Albany, N. Y.

9: 181-330 (April) 1935

Medical Aspects in Prevention and Management of Late and Latent Syphilis. A. Pfeiffer, Albany, N. Y.—p. 185.
Trends in Outcome of General Paresis. H. M. Pollock, Albany, N. Y.—p. 194.
Determinants of Adequate Psychotherapy in Public Mental Hospital. L. E. Hinsie, New York.—p. 212.
Concept of Mental Deficiency in Theory and Practice. D. Wechsler, New York.—p. 232.
Practicable Objectives of Physical Education in the Treatment of the Mentally Ill. J. E. Davis Sr., Perry Point, Md.—p. 237.
Sedimentation Test in Psychotic Patients with Pulmonary Tuberculosis. G. C. Bower and G. Schein, Marcy, N. Y.—p. 263.
Rupture of the Brain Stem in Cases of Traumatic Sudden Death. C. H. Hochman and F. M. Kramer, New York.—p. 271.
Parental Attitudes as Observed in Child Guidance Clinics. F. Rosenheim, Central Islip, N. Y.—p. 279.
Hereditary and Environmental Factors in Causation of Dementia Praecox and Manic Depressive Psychoses. H. M. Pollock, B. Malzberg and R. G. Fuller, Albany, N. Y.—p. 287.

Puerto Rico J. Pub. Health & Trop. Med., San Juan

10: 255-416 (March) 1935

Observations on Dermatomycosis in Puerto Rico: Further Report on Etiology of Epidermophytosis. A. L. Carrión, San Juan.—p. 255.

Rise and Fall of Tuberculosis in Certain American Peoples. E. R. Long, Philadelphia.—p. 270.

Bacillary Dysentery in Puerto Rico. O. C. Mandry, San Juan.—p. 308.

Apparent Points of Contact Between Daily Course of Magnetic Components of Earth Together with Certain Solar Elements, and Diastolic Pressure of Human Beings and Total Count of Their Leukocytes. A. M. Alvarez, San Juan.—p. 388.

Appendicitis. J. del Toro, San Juan.—p. 396.

Science, New York

81: 409-442 (May 3) 1935

*Meningitis in Man Caused by Filtrable Virus. T. M. Rivers and T. F. M. Scott, New York.—p. 439.

Cymarose. R. C. Elderfield, New York.—p. 440.

Effect of Practice on Intercorrelations of Motor Skills. C. E. Buxton and L. G. Humphreys, Portland, Ore.—p. 441.

Meningitis Caused by Filtrable Virus.—Rivers and Scott observed two men in whom an illness developed that was characterized by headache, vomiting, stiff neck and a high cell count, 1,700 and 720 per cubic millimeter, respectively, in the spinal fluid. The cells in the fluid were practically all mononuclear elements. Both patients made a slow uneventful recovery. The clinical pictures presented were almost identical and suggested a virus meningitis. Consequently, spinal fluid from each of them was inoculated intranasally, intraperitoneally and intracerebrally into six Swiss albino mice. By means of emulsions of bacteriologically sterile brain material injected intracerebrally into mice, the active agent has been passed serially through ten lots of mice and at present small amounts of a 10 per cent emulsion of infectious brain material kill practically all the mice in seven days. An active agent free from bacteria was obtained by the inoculation of a patient's spinal fluid into Swiss mice. The virus has been passed through nine sets of mice and reinoculation experiments clearly show that both strains are immunologically identical. The results of the experiments indicate that the virus obtained from the spinal fluid collected from the two patients is pathogenic for man. Two mice that received spinal fluid and recovered and five that received spinal fluid and did not become sick were later found to be solidly immune to the virus introduced intracerebrally. Neutralization tests conducted in mice and guinea-pigs show that serum collected from the patients at the beginning of their illness fails to neutralize the virus, while serum collected late in convalescence does inhibit its activity. The authors' virus is not similar to any active agent heretofore described, with the exception of those of Armstrong and Lillie and Traub.

Virginia Medical Monthly, Richmond

62: 61-122 (May) 1935

I. Sterility: II. Hormones in Gynecology. E. H. Richardson, Baltimore.—p. 62.

Clinical Study of Rocky Mountain Spotted Fever Eastern Type. H. B. Mulholland, University.—p. 71.

Prophylaxis in Head Injury. T. N. Spessard, Roanoke.—p. 76.

Discussion of Rubin Test and Hysterosalpingography in Sterility. J. Bear, Richmond.—p. 79.

Chronic Lead Poisoning in Early Childhood. H. H. Donnally, C. A. Schutz and A. Nimetz, Washington, D. C.—p. 83.

Carotid Sinus Reflex as Cause of Fainting and Convulsions. J. P. Baker Jr., Richmond.—p. 89.

Self Retaining Vaginal Retractor. P. H. Picot, Richmond.—p. 93.

Modification of the Belly Trocar. C. R. Irving, Saltville.—p. 93.

West Virginia Medical Journal, Charleston

31: 193-240 (May) 1935

Eczema of Children. S. L. Bauer, Cincinnati.—p. 193.

Acute Septic Throat—Treatment with Roentgen Rays: Preliminary Report of Thirty-Two Consecutive Cases. A. R. MacKenzie, Huntington.—p. 196.

Epidemic Jaundice in Children. M. A. Moore, Kingston.—p. 198.

Resection in Prostatic Carcinoma. R. M. Bobbitt, Huntington.—p. 202.

Diphtheria. A. B. Spahr, Newhall.—p. 203.

The Trained Nurse. T. W. Moore, Huntington.—p. 207.

Copper Ionization Treatment of Cervicitis. W. A. Quimby, Wheeling.—p. 210

New Legislation of Interest to the Hospitals and Doctors. J. W. Harris Jr., Charleston.—p. 213.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

10: 61-124 (April) 1935

*Atelectatic or Compensatory Bronchiectasis. L. Findlay.—p. 61.

Osteomyelitis of Maxilla in the New-Born. H. D. White.—p. 85.

*Gastric Secretion in Celiac Disease. Jessie W. Ogilvie.—p. 93.

Carcinoma of Thyroid Gland in Childhood: Report of Case. A. B. Taylor and B. M. Wilkinson.—p. 99.

*Blood Transfusion in Malnutrition of Infancy. M. L. Thomson.—p. 109.

Red Corpuscles in Acidosis and Alkalosis. W. T. W. Paxton.—p. 115.

Atelectatic or Compensatory Bronchiectasis.—Findlay reviews the history of atelectasis in the production of bronchiectasis. The view that the bronchiectasis accompanying pulmonary collapse is compensatory in nature is supported. The specific cause is the inability of the lung to fill the thoracic cavity and hence the necessity for some space communicating with the external air (alveolus or bronchus) to dilate. The significance of the so-called triangular shadow in the roentgenogram occupying one or the other diaphragmatico-vertebral angle is discussed. This shadow is shown to be caused by encysted effusions, fibrosis of the lung and thickened pleura, pneumonic consolidation and collapse of the lung. Stress is laid on the reinflatability of the lung as essential for a diagnosis of pulmonary collapse. Some previously recorded cases of atelectatic bronchiectasis are considered and the correctness of the diagnosis is submitted to criticism. Three personally observed examples of bronchiectasis with an accompanying triangular shadow are described. In all, the bronchiectatic lesion was situated at the right base, was of mild degree and was completely recovered from. In one the shadow was certainly due to collapse of the lung, and it is concluded that this was the cause of the bronchiectasis. In another case collapse was the probable cause, and in the third case pneumonic consolidation appeared to be the more likely etiologic factor.

Gastric Secretion in Celiac Disease.—Ogilvie gives the results of gastric analysis in a series of seventeen cases of celiac disease which confirm the observations of other workers that there is impaired secretion of free hydrochloric acid in the stomach but that true achlorhydria does not occur. There was no diminution in peptic activity, but a slight prolongation was noted in the emptying time. The total chloride was increased, a finding that is presumably the result of the greater concentration of chloride in the blood, which is to be attributed to the decrease in the red cell count and the increase in plasma. The hypochlorhydria is probably an important etiologic factor in the production of hypochromic anemia in patients with celiac disease.

Blood Transfusion in Malnutrition of Infancy.—Thomson illustrates that, in the marasmic infants whose constitution is such that neither skilful feeding nor expert nursing can coax them to health, blood transfusion is a worthy adjunct to routine methods. Used as an emergency measure in the extreme stages of enteritis, the results are often disappointing. The fact that one such patient, apparently moribund when transfusion was done, is now a healthy baby indicates that all measures should be tried even when the cause seems lost. The author's group of twenty cases in which blood transfusion was employed soon after the onset of enteritis shows distinctly favorable results. When the condition of malnutrition remained uncomplicated, blood transfusion led to an immediate and sustained gain in weight. These infants had failed to respond to routine treatment over a long period. No addition to the treatment was made either following the transfusion or for some days previous to it. Five patients with severe enteritis died. All the others to whom blood was given have subsequently done well. The results indicate that in most cases blood transfusion does supply a stimulus to the marasmic infant. Blood transfusion may act by supplying physiologic fluid, by supplying a deficiency of one or more of the solid contents of the blood and/or by exciting a tissue response in the bone marrow or elsewhere. In most of the cases one of the parents acted as donor, and in every case the recipient's serum was tested directly against

the donor's corpuscles. The serum and corpuscles were left in contact for twenty minutes before a decision was made on the compatibility of the bloods. In two instances the baby's serum agglutinated the mother's corpuscles, and one of these was a baby aged 6 weeks—an indication of how early in life the blood groups may be distinctly differentiated.

British Journal of Dermatology and Syphilis, London

47: 143-180 (April) 1935

Sympathetic Surgery in Treatment of Cutaneous Lesions. N. C. Lake. —p. 143.
Effect of Angle of Incidence on Dose of X-Rays Absorbed by Skin. E. H. Molesworth and A. R. Riddle.—p. 152.

British Medical Journal, London

1: 749-812 (April 13) 1935

*Induction of Abortion and Labor by Means of Estrin. A. L. Robinson, M. M. Datnow and T. N. A. Jeffcoate.—p. 749.
Hay Fever: Its Immunologic Mechanism, Diagnosis and Treatment. D. Harley.—p. 754.
Treatment of Cerebrospinal Fever. J. M. Kennedy.—p. 756.
Injury to Blood Vessels: Two Cases. J. C. Gillies.—p. 760.
Sodium Evipan Anesthesia in Ophthalmic Surgery, with Especial Reference to Disadvantages. I. L. Johnstone.—p. 761.
Evipan in Ophthalmic Surgery: Further Experiences. T. K. Lyle and F. G. Fenton.—p. 763.

Induction of Labor by Means of Estrogenic Substance.—Robinson and his associates believe that their animal and clinical results support the view that estrogenic substance is the main sensitizing factor of the human uterus. They find that it is impossible to overcome the inhibitory phase of the normal pregnant uterus by the injection of large quantities of the nonstimulating factors and that the hormone balance in normal pregnancy in the human being is not maintained simply by the relative quantities of progestin and estrogenic substance. They were unable to procure abortion by means of the material. Their clinical results have shown that when the substance is administered near term it may or may not induce premature labor but that it is not a reliable means of induction. It is an especially unsuitable method for cases in which it is necessary to bring on labor immediately because of the uncertain interval (up to seven or eight days) that intervenes between the commencement of treatment and the onset of expulsive contractions. Their experience has demonstrated that estrogenic substance is the best method of evacuating the uterus in cases of missed abortion or intra-uterine death of the fetus. The method, when correctly carried out, is successful in at least 80 per cent of cases, and it has the additional merit of being free from risk. The patient has the discomfort of several intramuscular injections, but she is immune from the danger of uterine trauma, infection and hemorrhage. The substance may prove of value in dealing with primary uterine inertia, as the authors' results have shown that the response to the therapy is dramatic and that it entails no risk to either mother or child. This treatment is at present expensive, but so far no attempt has been made to determine how little or how much of the hormone is required for therapeutic use, and it is quite possible that the amount being used may be unnecessarily large.

1: 813-862 (April 20) 1935

Organization of Treatment of Fractures. E. W. H. Groves.—p. 813.
Analgesics in Labor. J. E. Stacey.—p. 817.
*Ligation of Splenic Artery for Advanced Splenic Anemia. R. B. Watson.—p. 821.
Uncertified Death: Analysis of Two Hundred Postmortem Examinations Done in Public Mortuaries at the Request of the Coroner. T. S. Keith.—p. 822.
Unusual Case of Heart Block. T. W. Preston.—p. 825.

Ligation of Splenic Artery for Splenic Anemia.—Watson cites a case of splenic anemia in which ligation of the splenic artery was followed by general improvement. There was a history of splenomegaly for nineteen years. He states that the value of ligature of the splenic artery is apparent in that the case was seemingly hopeless. Rapid reduction in the size of the spleen took place gradually and the interval between tappings was increased. The improvement in general health has continued for more than three years after operation. There was apparent recovery of the liver. Ascites was present for six months prior to operation. Thrombosis occurred on the seventh day. Platelet counts were not made before operation. Ligation of the splenic artery is apparently a safe procedure, provided it is done sufficiently far from the spleen to avoid interference with the communication between the splenic and left gastro-epiploic arteries.

East African Medical Journal, Nairobi

12: 1-34 (April) 1935

Streptococcic Disease. G. V. W. Anderson.—p. 6.
Histamine in Treatment of Rheumatism. A. D. Charters.—p. 22.

Indian Medical Gazette, Calcutta

70: 181-240 (April) 1935

Incidence of Pneumococcic Types in Pneumonia in Assam. L. E. Napier and Dharmendra.—p. 181.
*Preliminary Observations on New Soluble Atabrine Compound. J. R. Blaze and A. T. W. Simeons.—p. 185.
Habitual Use of Barbituric Acid Derivatives in India. R. N. Chopra and G. S. Chopra.—p. 188.
Bernhardt's Syndrome. E. Muir and S. N. Chatterji.—p. 192.
Reticulo-Endothelial System in Malarial Hemoglobinuria of Monkeys. K. V. Krishnan.—p. 193.
Id.: Part II. Relation of Spleen to Hemoglobinuria. K. V. Krishnan and B. M. Ghosh.—p. 197.
Preliminary Note on Cultivation of Vaccinia Virus on Chorio-Allantoic Membrane of Chick Embryo. K. S. Shah.—p. 200.
Hygienic Method of Composting Refuse with Night Soil. J. J. Rao and V. Subrahmanyan.—p. 202.
Value of Phrenic Exeresis in Treatment of Pulmonary Tuberculosis. P. V. Benjamin.—p. 207.

Treatment of Malaria with Atabrine Musonate.—Blaze and Simeons treated twenty-one malaria patients with atabrine musonate, an atabrine salt of musonic acid, soluble in water. Its intramuscular injection in therapeutic doses does not give rise to toxic symptoms. While a single injection of 0.375 Gm. has in some cases a remarkable effect on the clinical picture, a recrudescence usually occurs within a few days. Heavy malignant tertian infections are only slightly influenced. Two injections of 0.375 Gm. given on successive days are sufficient to control the temperature within forty-eight hours, and in a maximum of four days all forms of benign tertian parasites and the ring forms of malignant tertian parasites disappear. Crescents appear to be in no way influenced and must be destroyed by plasmochin. In some cases there is a reappearance of parasites in the blood after a few days, but they disappear spontaneously. In no case has there been a return of fever after two injections. The intravenous route though harmless is not satisfactory for routine treatment. The immediate results of treatment with atabrine musonate justify a preliminary report, but the authors state that the period of observation has not been long enough to enable them to compare the rate of relapse after atabrine musonate with that after oral atabrine or quinine.

Journal of Physiology, London

84: 1-110 (April 26) 1935

Some Factors Influencing Heat Production of Muscle After Stretching. U. S. v. Euler.—p. 1.
Antiketogenic Substance and Phlorhizin Diabetes. P. T. Black.—p. 15.
Rôle of Nerves in Action of Acetylcholine on Embryonic Heart. P. B. Armstrong.—p. 20.
Alleged Occurrence of Acetylcholine in Saliva. O. S. Gibbs.—p. 33.
Effect of Fat on Gastric Motility. B. A. McSwiney and W. R. Spurrell. —p. 41.
Excitation of Medullated and Nonmedullated Nerves by Currents of Short Duration. H. Rosenberg.—p. 50.
Mortality of Adrenalectomized Young Rats, with Improved Technic of Operation, and After a Period of Treatment with Cortical Hormone. P. Schultzer.—p. 70.
Effect of Nonelectrolyte on Size of Action Potential of Nerve. K. Yamagiwa.—p. 83.
Quaternary Ammonium Salts and Action Currents in Nerve. S. L. Cowan and H. R. Ing.—p. 90.

Journal of Tropical Medicine and Hygiene, London

38: 93-104 (April 15) 1935

Etiology of Diabetes in War Pensioners. S. Vatcher and M. Douglas. —p. 93.

Medical Journal of Australia, Sydney

1: 447-478 (April 13) 1935

Plea for More Intensive Study of Surgical Pathology. H. S. Stacy. —p. 447.
Tasmanian Craniums in Collections in the Commonwealth. J. Wunderly. —p. 455.
Use of Permanent Standard in Folin-Wu Method of Determination of Sugar in Blood. S. S. Rosebery.—p. 461.

Presse Médicale, Paris

43: 569-600 (April 10) 1935

General Considerations on Cardiac Insufficiency. A. Clerc.—p. 569.
Diphtheria in Subjects with Negative Schick Reactions. F. Meersseman and P. Renard.—p. 572.
*New Treatment of Cerebral Hemorrhage. R. Colella and G. Pizzillo.—p. 574.
Standard of Lowest Dynamic Pressure. V. Arnovljevic and J.-B. Milovanovitch.—p. 576.
*Attempt at Substitution of Vaccinotherapy by More Practical Method. S. Golovine.—p. 579.

New Treatment of Cerebral Hemorrhage.—Colella and Pizzillo report observations on thirty-five patients with cerebral hemorrhage. The method of research consisted primarily in precision of diagnosis and close observation of the symptoms before, during and after the intramuscular injection of the patients own blood. Especial attention was given to the comatose state, arterial pressure, muscular power and capacity for movement. The technic of treatment consisted in the removal of from 25 to 30 cc. of venous blood and its immediate reinjection in the gluteal region of the well side. If immediate injection is impossible, a few cubic centimeters of sodium citrate should be aspirated into the blood to prevent clotting. The authors report seven cases in detail. All the patients with cerebral hemorrhage did not obtain an equally rapid improvement of the lesion, but all or almost all had a return of consciousness, often during the course of injection of blood, and all had a more or less rapid and complete return of their capacity for movement. Even old lesions can be favorably influenced to a varying degree. The theories brought forward to explain the action of autohemotherapy are multiple and indefinite. Even though adequate theoretical explanation is now impossible, the authors believe that the practical aspects are indubitable.

Substitute for Vaccinotherapy.—Golovine describes a method of automicrobiotherapy which can be carried out without extensive bacteriologic equipment. For patients in whom the pathogenic organism is found in the urine, the technic is as follows: From 15 to 20 cc. of urine is centrifugated, the supernatant fluid decanted, and the centrifugate resuspended in about 5 cc. of sterile physiologic solution of sodium chloride. Sterilization is obtained by adding two drops of iodized alcohol per cubic centimeter of liquid. In a few minutes it is ready for injection. Injection is subcutaneous or intramuscular and the first is with 0.25 or 0.5 cc. The technic for other conditions, i. e., furunculosis, soft chancre, and so on, consists in removal of the material from the lesion by means of a sterile platinum loop to 5 cc. of sterile physiologic solution of sodium chloride until the liquid is thickly turbid. After this the technic is the same as for the specimens of urine. The results of the treatment are as good if not better than those obtained with autogenous vaccines, and the method is one that can be followed in the colonies or other regions in which careful bacteriologic isolation and culture are impossible.

43: 625-640 (April 17) 1935

*Masked Cholecystitis and Colon Bacillosis. P. Jacquet and S. Thieffry.—p. 625.
*Schultz-Charleton Blanching Phenomenon in Scarlet Fever. T. Dumitresco.—p. 626.
Intestinal Occlusion: Case. Ho-Dac-Di and Huynh-Tien-Doi.—p. 629.

Cholecystitis and Colon Bacillosis.—Jacquet and Thieffry were struck by the frequency with which unrecognized cholecystitis was associated with known colon bacillus infection or even simple colon bacilluria. After studying all colon bacillus infections systematically, they reached the conclusion that the gallbladder and biliary passages act as a reservoir of infection for the production of bacteria. Hence, they play a definite part in the persistence of colon bacillosis and its frequent incurability.

Blanching Phenomenon in Scarlet Fever.—Dumitresco reviews the definition, frequency, significance, mechanism and theoretical basis and makes some personal observations on the skin blanching which occurs in scarlet fever. As a result he concludes that there is a definite analogy between the blanching caused by convalescent serum, normal serum and Dick's antiscarlatinal serum. The only difference is that with calcium chloride the blanching is produced over a smaller surface and in a less intense manner. In general, the phenomenon is produced over a wider surface by the weaker dilutions (1 or 2 per cent) than by more concentrated solutions (5 or 10 per cent).

Revue Française de Pédiatrie, Paris

11: 137-264 (No. 2) 1935. Partial Index

*Treatment of Bronchopneumonia in Infants by Blood Transfusion. P. Rohmer and B. Tassovatz.—p. 137.
*Erythema Nodosum with Negative Tuberculin Reaction. N. Landorf.—p. 157.
Site of Predilection of Primary Bony Mycoses. E. Allenbach and M. Zimmer.—p. 168.
Tuberculous Infection of Nursling by Short Lived Contact. A. Vallette and B. Rosenkranz.—p. 179.

Treatment of Bronchopneumonia in Infants.—Rohmer and Tassovatz treated bronchopneumonia in infants by means of citrated blood transfusions. The first step of their technic consisted in collecting the blood from the donor. The 100 to 120 cc. of blood necessary was collected in a 300 cc. cylindric tube containing 0.8 Gm. of sodium citrate per hundred cubic centimeters of blood. The second step was the exsanguination of the infant. This was accomplished by withdrawing blood from the lateral sinus in infants or from the veins of the elbow in children aged more than 1 year. The amount of blood withdrawn depended on the severity of the disease process; in less severe processes only a small portion need be withdrawn, but in toxic-infectious cases the amount withdrawn should almost equal the quantity to be injected. The final step, the injection of blood, was made directly after the bleeding. The injection was made slowly—about 20 cc. each five minutes. During the course of injection it was necessary to watch the pulse, respiration and facies of the infant. The mode of action of transfusions in infectious states is not known. It appears, however, to be multiple and affects the general condition, the temperature, the cardiovascular system and the anatomic lesions of the respiratory apparatus. Simple bronchopneumonia recovers without transfusion. In the more complicated and severe forms transfusion, sometimes repeated three or four times, results in a marked decrease in mortality. In this group the authors obtained a statistical decrease in mortality from 70 per cent in untreated cases to 30 and later 20 per cent of the treated. Serious accidents may occur and the authors recommend the preventive injection (one hour before the transfusion) of camphorated oil and epinephrine-hypophysin and to repeat this in severe cases at the end of the transfusion.

Erythema Nodosum with Negative Tuberculin Reaction.—In the Scandinavian countries, according to Landorf, about 97 per cent of the cases of erythema nodosum can be definitely connected with tuberculosis by means of the roentgen ray or the tuberculin test. In this report, however, he studied a group of children with erythema nodosum who failed to give any evidence of tuberculosis, even when tested with tuberculin in high doses. These observations reject the idea that erythema nodosum without sensitivity to tuberculin can have the same etiology as erythema nodosum possessing a high degree of sensitivity to tuberculin and accompanied generally by unquestionable manifestations of tuberculosis. One case, cited in detail, offers strong evidence that erythema nodosum may occur in children not affected with tuberculosis as a nonspecific allergic symptom.

Policlinico, Rome

42: 261-324 (May 1) 1935. Medical Section

Grave Anemia with Splenomegaly and Erythremia: Case. P. Stefanutti.—p. 261.
*Parathyroids and Metabolism of Carbohydrates. A. Ferrannini.—p. 285.
Dextrose in Saliva. G. Dessy.—p. 299.
*"Ptosis Palpebralis Consensualis" (Supranuclear Paralysis). A. Giannelli.—p. 302.
Hyperplasia of Plantar Aponeurosis in Lesions of Sciatic Nerve: Case. R. Liberti.—p. 319.

Action of Parathyroid Extract on Carbohydrate Metabolism.—Ferrannini studied the action of parathyroid extract on glycemia of normal persons. He carried out his investigations in three groups of individuals: In one group he investigated the action of parathyroid extract on glycemia, in another its

action on sugar tolerance and in the third the relation that exists between the action of parathyroid extract and that of epinephrine on glycemia. From the results of his investigations the author concludes that parathyroid extract produces a decrease of glycemia, which oscillates between 13 and 56 per cent. These results were seen in almost all cases (thirteen out of fourteen). Parathyroid extract produces also an increase in the tolerance to carbohydrates. Its action on glycemia is similar to that of insulin.

Ptosis of Upper Eyelid.—Under the name of "ptosis palpebralis consensualis," Giannelli reported, in 1906, the following phenomenon: In producing passive closure of the eye with normal vision in certain persons suffering from unilateral amaurosis, the upper eyelid of the amaurotic eye would also close. On covering the normal eye with a protector, both upper eyelids would lie lowered. The author reports four new cases in which he observed this phenomenon. In one case, left hemiparesis and conjugate deviation of the eyes to the right existed simultaneously (Foville's syndrome). The phenomenon disappeared with the syndrome by antisyphilitic treatment. In another case, the author made a serial examination of the encephalon. He reviews the anatomicopathologic literature on the nervous supply of the different ocular muscles, especially that of the levators of the eyelids. He shows the lack of agreement in the opinions of observers as well as in those of experimenters in relation to the site of the nervous lesion causing ptosis of the upper eyelid, and in this connection he emphasizes the importance of one of his clinical cases, in which the palpebral condition coexisted with Weber's syndrome of the Foville type. He concludes that the loss of sight in one eye is not necessary for the development of palpebral ptosis, that there is no relation between the presence of ptosis and the ability to close the eye voluntarily and that the type of palpebral ptosis described is a form of supranuclear paralysis localized in the ventral proximal portion of the pons or in the immediate vicinity of the distal part of the nuclear column of the third pair of nerves in such a way that the corticonuclear channels through which the antagonistic action of the nerves on the levator and the orbicularis is conducted are interrupted and result in the production of the palpebral phenomenon.

Archiv für Gynäkologie, Berlin

159: 101-312 (April 18) 1935. Partial Index

Demonstration of Prolan in Tumors. U. Baudler.—p. 101.
*Bacteriology of Uterus and Vagina During Puerperium. A. A. Smorodinzeff, G. D. Dertschinsky and I. G. Wygodskaja.—p. 155.
*The Weather and Labor Pains. F. Jacobs.—p. 226.
Eclampsia and Weather. F. Jacobs.—p. 255.
*Connection Between Eclampsia and Changes in Weather. A. von Latzka.—p. 286.

Bacteriology of Uterus During Puerperium.—Smorodinzeff and his associates show that the generally accepted theory that the uterus of puerperal women without fever is infected after the fifth day must be revised. They show that the erroneous conclusions reached by most investigators are due to an incorrect evaluation of the bacteriologic changes, to the neglect of a qualitative and quantitative analysis and to the imperfection of the method of withdrwal of specimens of the uterine contents. The authors withdrew on different days of the puerperium specimens of lochia in seventy-five puerperal women. They obtained the lochia with the improved method of Dertschinsky (The Journal, January 19, p. 268), subjected the specimens to quantitative and qualitative analysis and found the uterine contents sterile in the majority of puerperal women who were free from fever. However, in puerperal women who had fever they found that the uterine cavity contained large numbers of bacteria, primarily streptococci and staphylococci. Döderlein's opinion that there is a parallelism between the clinical course of the puerperium and the bacterial contents of the uterine cavity was corroborated by their observations.

The Weather and Labor Pains.—The statistical analysis of a large material convinced Jacobs that birth and death are to a certain extent determined by the weather. In studying the part played by meteorologic factors, he gave especial attention to the atmospheric pressure and the temperature. He detected an especially close connection between the life processes and the temperature and shows that the "retardation" in the biologic curves in relation to the atmospheric pressure can largely be explained from the course of the temperature. However, the author concedes that all meteorologic elements, even those disregarded in this study, are interrelated and that therefore the results reached by him are not final. He found that a considerable decrease in the mortality curve accompanies a considerable decrease in the birth and temperature curves and follows shortly after a reduction in the atmospheric pressure.

Eclampsia and Changes in Weather.—In reviewing the eclampsia material of the women's clinic of the University of Budapest, von Latzka gained the impression that the incidence of eclampsia is highest during the months of June, July, August and September. A study of the meteorologic conditions disclosed that the twenty-six cases of eclampsia, which were admitted to the clinic since 1931, all were meteorotropic. However, studies on the material from other clinics disclosed the absence of such a relationship in almost 10 per cent of the cases. It appears that the eclamptic attacks of hepatogenic and cerebral origin are independent of the changes in the meteorologic conditions.

Beiträge zur klinischen Chirurgie, Berlin

161: 337-512 (April 24) 1935. Partial Index

Injuries Due to Bites. E. Hudacsek.—p. 337.
Edema and Disturbances of Motion and Sensation After Radical Operation for Cancer of Breast. Ruth Beyer.—p. 347.
*New Method of Obtaining Prostatic Tissue for Biopsy. H. Viethen.—p. 361.
*Experimental Contribution to Origin of Intestinal Ulceration (Duodenum). S. Stelzer.—p. 399.

Method of Biopsy of Prostate.—According to Viethen, biopsy on the prostate has been but seldom carried out because of the difficulty of the transvesical, perineal or rectal approach. The easiest approach is by way of the urethra. This was made possible by electrotomy instruments so constructed that the active electrode excises rather than incises the tissue and that the current employed cuts rather than coagulates. In diagnosing the tissue thus obtained, one must bear in mind the characteristic alterations produced by the current, such as enlargement of nuclei and of cells, and the frequent tearing away of glandular duct epithelium. The endo-urethral method of biopsy is indicated when the differential diagnosis between inflammatory conditions, tuberculosis, hypertrophy or carcinoma cannot be made on clinical data. With proper technic the procedure is devoid of danger or later complications. It was successfully carried out in the Münster clinic (Prof. H. Coenen) on forty patients.

Origin of Intestinal Ulceration.—Stelzer made a Pavlov pouch in dogs from the infrapapillary portion of the duodenum and introduced a cannula into it. After the pouch had healed, he performed an anastomosis between the stomach and the duodenum, thus making the gastric juice flow directly over the infrapapillary portion of the duodenum. The p_H determinations of the blood plasma and of the duodenal secretions were made on alternating days. The animals were given daily hypodermic injections of histamine, 0.1 mg. for each 15 Kg. of body weight, for from six to eight weeks, at the end of which time the animals were killed. The author found typical ulcers in the infrapapillary portion of the duodenum below the anastomosis and none at the anastomosis. It appears that the mechanical damage to the mucosa from the use of clamps and suturing played a subordinate rôle in the causation of ulceration and that the ulcers found in the duodenal portion were due to the direct action of the histamine-stimulated gastric secretion introduced directly on the intestinal mucosa. The upper portion of the duodenum did not prove to be more resistant to the continued action of the gastric juice than other portions of the small intestine. In view of the fact that nervous influences, muscular spasms and circulatory disturbances could be definitely ruled out in these experiments, the damage to the mucous membranes must be ascribed to the peptic action of the gastric juice.

Deutsche medizinische Wochenschrift, Leipzig

61: 697-740 (May 3) 1935. Partial Index

Neglected Diagnosis of Carcinoma. F. G. Dietel and H. Ditsch.—p. 698.
*New Method of Roentgenoscopy in Pulmonary Diagnosis: Roentgenography of Sections and Layers of Lung (Tomography). H. Chaoul.—p. 700.
Deformities of Peripheral Diaphragm. R. Raspe.—p. 703.
*Etiology of Köhler's Disease of Navicular Bone of Foot. J. W. Camerer.—p. 713.

Roentgenography of Sections and Layers of the Lung.—The new method described by Chaoul makes possible roentgenograms of sections and layers of any thickness desired and of structures at various depths, with the exclusion of portions located anteriorly and posteriorly. The advantage of this method becomes evident when it is considered that an ordinary roentgenogram is the product of the superposition of the shadows of all the structures that are within the cone of the rays. This summation of the shadows results in pictures the analysis of which is not only difficult but also misleading. The author illustrates this on a schematic sketch. He points out that the roentgenologic demonstration of sections of the body was first attempted by Bocage in 1921 and later by von Bartelink and Ziedses Des Plantes. However, the apparatus constructed by those investigators had shortcomings so that they were useless for practical purposes. Grossmann succeeded recently in constructing a tomographic instrument that proved suitable for practical work. The author improved the apparatus further so that the tomograph is now capable of producing roentgenograms of layers measuring from a few millimeters to 2 cm. in thickness. The instrument consists of a double-armed pendulum, turnable on its horizontal axis, to which are fastened the tube focus above and the film holder below. If the pendulum is swung from one point through the perpendicular central position to the other terminal point, the body layer located at the level of the axis of rotation is demonstrated as a sharply outlined picture, whereas all the structures located above and below become effaced. Thus the axis of rotation or the pendulum system needs only to be lifted or lowered in order to obtain pictures of higher or lower layers. The time required for making a tomogram varies from one to several seconds. The author reproduces and describes tomograms of a lung presenting productive fibrous tuberculosis, of a normal lung and of a lung showing fibrous cavernous tuberculosis.

Etiology of Köhler's Disease of Navicular Bone.—Camerer observed Köhler's disease of the navicular bone of the foot and also disturbances in the ossification of the first cuneiform bone in two enzygotic triplets. The third triplet, although exposed to the same environmental influences, did not have this disorder. He differed from the other two triplets in several factors, so that the triplets may be considered as dizygotic. The author considers the fact that only the two enzygotic triplets developed Köhler's disease proof that genotypical factors are responsible for this disorder. He cites several reports from the literature that indicate the same etiology.

Klinische Wochenschrift, Berlin

14: 593-624 (April 27) 1935. Partial Index

*Development of Local Edema and Its Therapeutic Modification. C. Ernst.—p. 599.
Further Studies on Power of Erythrocytes to Destroy Insulin. F. Rosenthal, Ilse Friedheim and R. Nagel.—p. 603.
*Chorea Minor and Avitaminosis. F. Widenbauer.—p. 608.
Familial Cholemia. C. A. A. Schrumpf.—p. 612.

Local Edema.—Ernst states that he was able to demonstrate local edemas or an increased fluid content in the tissues of patients with vasoneurosis and of patients with red hypertension. He discusses the various factors that play a part in the development of local edemas, such as changes in the capillary contents, in the permeability of the capillary walls and in the structure and function of the tissues. That the capillaries of the two groups of patients have an increased permeability has been clearly demonstrated by cutaneous wheal tests, which proved that the capillaries have an increased permeability for protein, and, since relatively small amounts of protein are capable of binding comparatively large amounts of water, this factor deserves especial consideration in local edemas. The author suggests the possibility of a hereditary deficiency to explain the origin of the increased permeability. Moreover, the capillaries, particularly the venous ones, are dilated and dilatation is nearly always accompanied by increased permeability. The author thinks that endocrine, nervous and ionic factors play a part in the dilatation. However, the increased permeability alone is not a satisfactory explanation and it is possible that the tissue colloids also play a part. In this connection the author points out that in an acid milieu the cells have a tendency to retain greater amounts of water and that the simultaneous administration of acids increases the diuretic effect of salyrgan. To be sure, here too the mechanism is somewhat involved, for, according to Veil, the diuresis is increased in greater acidity as well as in greater alkalinity. The author stresses the relation of the local edema to certain therapeutic measures, particularly venesection. He points out that venesection generally produces considerable improvement in patients with red hypertension. The author thinks that the favorable effect of venesection in patients with vasoneurosis or hypertension may be due to the fact that it effects a change in the abnormal constituents of the tissues. These patients frequently complain of fatigue, drawing pains in the back and in the extremities, vertigo, gastric disturbances and headaches. He points out that on the basis of his studies it appears probable that, as a result of the abnormal circulation, the tissues contain not only greater amounts of fluid, but also metabolic waste products, which result in the aforementioned symptoms. Venesection, by producing a sufficient difference in concentration between the tissue and the blood, makes an adequate discharge possible.

Chorea Minor and Avitaminosis.—Widenbauer gives the history of a boy with chorea mollis, who also had gastric achylia. He cites factors that suggest relations between chorea minor, spasmophilia, funicular myelitis and B avitaminosis. Yeast therapy was instituted because a deficiency in vitamin B was suspected. This treatment proved successful after other measures had failed. Subsequently the author resorted to treatment with yeast in three cases of chorea minor. These cases were likewise cured within a short period.

14: 625-664 (May 4) 1935. Partial Index

Determination of Oxygen Pressure. F. Meyer.—p. 627.
Tests on Therapeutic Applicability of Intermedin in Diabetes Insipidus. J. Dischreit.—p. 629.
Craniocerebral Iontophoresis. H. Ehrenwald.—p. 632.
Determination of Skin Temperature in Sciatica. E. Eldblom.—p. 639.
*Cholesterol in Xanthomatosis. L. Nékám Jr. and Berta Ottenstein.—p. 641.

Cholesterol and Xanthomatosis.—Nékám and Ottenstein relate the history of a woman, aged 53, who had on the trunk, particularly in the gluteal region and on the extensor surfaces of the upper extremities, numerous yellow papules, the size of lentils. The patient's skin likewise was slightly yellow, but the mucous membranes showed no icteric discoloration. Histologic examination of the papules disclosed a typical xanthomatous structure. The authors examined the blood of the patient for total fat content, total cholesterol content, cholesterol ester, free cholesterol, lecithin, and lipoid phosphorus. The cholesterol and lecithin values were increased. The ratio between free cholesterol and ester cholesterol, which in the beginning was 1:6.5, was altered in the course of the treatment to 1:2; that is, it approached the normal ratio. Because there have been cases of xanthoma, in which the cholesterol was not increased, various theories have been advanced to explain the pathogenesis of xanthomatosis. Some stressed the importance of the lipoid correlation, while others assumed that the impairment of the esterizing action of the liver was important. In the patient whose case is reported, the esters were increased, however, and other functional tests of the liver disclosed normal conditions. In view of the hypercholesteremia, the authors considered the possibility of a deficient decomposition of the cholesterol and conducted a number of tests, which disclosed the absence of a functional disturbance in the decomposition of the cholesterol. They demonstrated that even under physiologic conditions there was no fermental cleavage of the cholesterol. However, they observed bacterial decomposition of cholesterol with a suspension of colon bacteria and with an extract obtained from the colon.

Medizinische Klinik, Berlin

31: 569-600 (May 3) 1935. Partial Index

*Morphology and Functional Significance of Dome of Stomach. K. Heckmann.—p. 576.
Rare Disorders Simulating Acute Appendicitis. R. Stohr.—p. 578.
Failure to Recognize Perivenous Pachyderma. G. Nobl.—p. 580.
Tuberculosis and Pregnancy. Luise Rickers.—p. 582.

31: 601-636 (May 10) 1935. Partial Index.

When Is Surgery Indicated in Diseases of Biliary Tract? H. Finsterer.—p. 601.
*Morphology and Functional Significance of Dome of Stomach. K. Heckmann.—p. 611.
*Hypochloremic Azotemia in Surgical Patients. K. Franke and S. Litzner.—p. 614.
*Splenectomy in Leukemia. H. L. Popper.—p. 615.
Examinations in Acute Gastritis. E. Frohlich and L. Zwillinger.—p. 616.

Morphology and Function of Dome of Stomach.—Heckmann shows that under normal conditions the dome of the stomach is in intimate contact with the left half of the diaphragm. If this is not the case, that is, if the distance of the upper aspect of the dome of the stomach from the upper aspect of the diaphragm is more than the combined thicknesses of the gastric wall and of the diaphragm, it is an indication of a pathologic condition. This symptom appears in ascites, in carcinoma of the gastric dome or of the cardia, in perigastric adhesions in the region of the dome and in case of a displacement of the transverse colon above the stomach, between it and the dome of the diaphragm. The gastric dome has several functions, the most important of which is regulation of the internal pressure of the stomach, in that its size varies so that the total volume of the gastric contents becomes adjusted to the tonus determined internal space of the stomach, that is, the dome is small in case of high tonus of the gastric walls and large in case of low tension, so that the necessary tonus is still attained. Phenomena such as persistent eructation and aerophagy occasionally may be compensatory mechanisms; in other instances they are probably not the result of a primary change in the tonus but are of psychogenic origin. In the latter case, they signify a functional disturbance of the stomach, which becomes manifest in sudden changes in the gastric pressure during the motor processes if the dome is too small, and in inadequate evacuation if the dome is too large.

Hypochloremic Azotemia in Surgical Patients.—Franke and Litzner examined the behavior of the sodium chloride and the urea contents of the blood in forty patients who had been operated on. They found that the reduction in the sodium chloride and the increase in the urea (hypochloremic azotemia) are changes that take their course independently of each other but which frequently have a common origin. It is not so much the surgical wound surface that is the cause of this, but rather a hepatic disturbance, which in turn is the result of the primary disease or of the anesthesia. The hepatic disturbance causes changes in the mineral economy and in the nitrogen disintegration. In this connection the authors call attention to the advantages of local anesthesia compared to general anesthesia. They point out that, in cases with a considerable reduction in the sodium chloride content of the blood, it is advisable to administer sufficient quantities of sodium chloride before or after the operation, although an oversupply of sodium chloride should be avoided, because it exerts an unfavorable influence on the healing process. Protective treatment of the liver is advisable, particularly if general anesthesia is employed.

Splenectomy in Leukemia.—Popper relates the history of a man, aged 32, with intraperitoneal hemorrhage in myeloid leukemia. Splenectomy was done and was well tolerated by the patient. The blood picture improved at first, but when, after several months, it again became unfavorable, roentgen irradiation was instituted and improved the blood status again. The patient's general condition was good for about a year. Then leukemic swelling of the glands developed, but these, too, improved under roentgen therapy. The patient died fifteen months after the splenectomy as the result of strangulation ileus. The author thinks that splenectomy should not be absolutely rejected in myeloid leukemia. He considers it justified in acute conditions, such as intraperitoneal hemorrhage, torsion of the spleen or infarcts and, with preliminary roentgen irradiation, also in other suitable cases.

Münchener medizinische Wochenschrift, Munich

82: 733-772 (May 9) 1935. Partial Index

Helminthiasis and Cancer. G. B. Gruber.—p. 733.
Clinical Aspects of Hypophyseal Diseases. W. H. Veil.—p. 735.
Practical Significance of Electrocardiography. H. Müller.—p. 739.
*Practical Application of Salt-Free Diet. W. Anton.—p. 742.

Practical Application of Salt-Free Diet.—According to Anton, a restriction in the use of water is of great importance in the preparation of salt-free food, for as a rule salt becomes necessary in proportion to the water content of the food. The generous use of raw vegetables is another great aid in salt-free diet. Moreover, the patient will require a certain time before he becomes accustomed to the salt-free diet. Meat can be made tasty without the use of salt by browning it quickly and adding only a little water. Natural condiments such as caraway, mustard, nutmeg, onions, cheese, butter and lemon can be used. Soups are improved in taste by the addition of vegetables, egg, cream and butter. Sweet, cold fruit soups may be served. Leafy vegetables should not be boiled in water. Potatoes should be boiled with their skins on, for then the lack of salt is not so noticeable. Root vegetables likewise should be boiled uncut and unpeeled. In preparing salads from raw leaves, care should be taken that the leaves are well dried after they are washed. If this is done, vinegar, lemon or dressings prepared with them will give a good flavor without the aid of salt. If boiled vegetables are used for salads, they should be marinated for some time before serving. The taste of farinaceous foods is generally improved by the addition of cheese. A tasty salt substitute may be used in the water in which the farinaceous foods are boiled and also for seasoning at the table and in the preparation of some other foods.

Zeitschrift f. Geburtshülfe u. Gynäkologie, Stuttgart

110: 225-367 (April 16) 1935. Partial Index

*Relation of Adrenal Cortex to Gonads. S. Thaddea.—p. 225.
Interstitial Pregnancy. O. Frankl.—p. 246.
Seven Cases of Ovarian Disgerminoma. W. Reifferscheid.—p. 273.

Relation of Adrenal Cortex to Gonads.—Reports in the literature as well as his own animal experiments and clinical observations convinced Thaddea that the hormones of the adrenal cortex play an important part in the regulation of carbohydrate metabolism. Experimental and clinical observations indicate that interrelations exist between the adrenal cortex and the gonads and between the anterior lobe of the hypophysis and the adrenal cortex. The hormone of the adrenal cortex influences the gonadal function apparently by way of the anterior lobe of the hypophysis. The author calls attention to the close biologic relation between vitamins and hormones, particularly between the hormone of the adrenal cortex and vitamin C. Moreover, it cannot be doubted that vitamin C, just as the fat soluble vitamins, has correlations with the sexual sphere. The author considers the connection between Addison's disease and certain problems of pregnancy; namely, susceptibility to toxins, uterine contractions, pigment formation, sodium chloride exchange and adynamia. The organism's requirements for the hormone of the adrenal cortex are apparently considerably increased during pregnancy, and there are indications of increased sensitivity to toxins during Addison's disease. In mild cases of Addison's disease it may be possible to carry the pregnancy to term, provided suitable hormone therapy is instituted. However, in severe cases interruption of the pregnancy is indicated. The uterine contractions are normal during Addison's disease. Pigmentation increases during pregnancy, in spite of treatment with the adrenal cortex extract. The symptoms most worthy of attention in the pregnant woman with Addison's disease are hyperemesis and adynamia. The sodium chloride content is usually reduced and, since the hyperemesis reduces it still more, it is advisable to administer sodium chloride solution in addition to the usual dextrose-hormone therapy. The author sees the cause of the adynamia in a reduction of the glycogen, the lactic acid and the creatine phosphoric acid. Studies on the carbohydryate metabolism during Addison's disease and pregnancy indicate that it undergoes great changes in the hepatic and muscular chemistry, which cannot be compensated by the administration of adrenal cortex extract. That deficiency in the hormone of the adrenal cortex produces severe structural changes in the gonads was observed in human subjects and was corroborated in animal experiments.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE 1935

Abstracts of important articles in the following journals have been made in the Current Literature Department of THE JOURNAL during the past six months. Any of the journals, except those starred, will be lent by THE JOURNAL to subscribers in continental United States and Canada and to members of the American Medical Association for a period not exceeding three days. Two journals may be borrowed at a time. No journals are available prior to 1925. Requests for periodicals should be addressed to the Library of the American Medical Association and should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Thus most of these journals are accessible to the general practitioner.

Acta Chirurgica Scandinavica. Stockholm.
Acta Medica Scandinavica. Stockholm.
Acta Obstetricia et Gynecologica Scandinavica. Helsingfors.
American Heart Journal. St. Louis.
American Journal of Anatomy. Philadelphia.
American Journal of Cancer. New York.
American Journal of Clinical Pathology. Baltimore.
American Journal of Digestive Diseases and Nutrition. Chicago.
*American Journal of Diseases of Children. A. M. A., Chicago.
American Journal of Hygiene. Baltimore.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. St. Louis.
American Journal of Orthopsychiatry. Menasha, Wis.
American Journal of Pathology. Boston.
American Journal of Physiology. Baltimore.
American Journal of Psychiatry. New York.
American Journal of Public Health. New York.
American Journal of Roentgenol. & Rad. Therapy. Springfield, Ill.
American Journal of Surgery. New York.
American Journal of Syphilis and Neurology. St. Louis.
American Journal of Tropical Medicine. Baltimore.
American Review of Tuberculosis. New York.
Anatomical Record. Philadelphia.
Annales des Maladies Vénériennes. Paris.
Annales de Médecine. Paris.
Annals of Internal Medicine. Lancaster, Pa.
Annals of Medical History. New York.
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SUBJECT INDEX

This is an index to all the reading matter in THE JOURNAL. In the Current Medical Literature Department only the articles which have been abstracted are indexed.

The letters used to explain in which department the matter indexed appears are as follows: "BI," Bureau of Investigation; "E," Editorial; "C," Correspondence; "ME," Medical Economics; "ab," abstract; the star (*) indicates an original article in THE JOURNAL.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts" and "Societies" are indexed under these titles at the end of the letters "B," "D," "M," and "S." State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states. Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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Acad.—Academy	*M.—Medical*
Am.—American	*Med.—Medicine*
A.—Association	*Nat.—National*
Coll.—College	*Phar.—Pharmaceutical*
Conf.—Conference	*Phys.—Physicians*
Cong.—Congress	*Rev.—Revision*
Conv.—Convention	*Ry.—Railway*
Dist.—District	*S.—Surgical*
Hosp.—Hospital	*Soc.—Society*
Internat.—International	*Surg.—Surgery*
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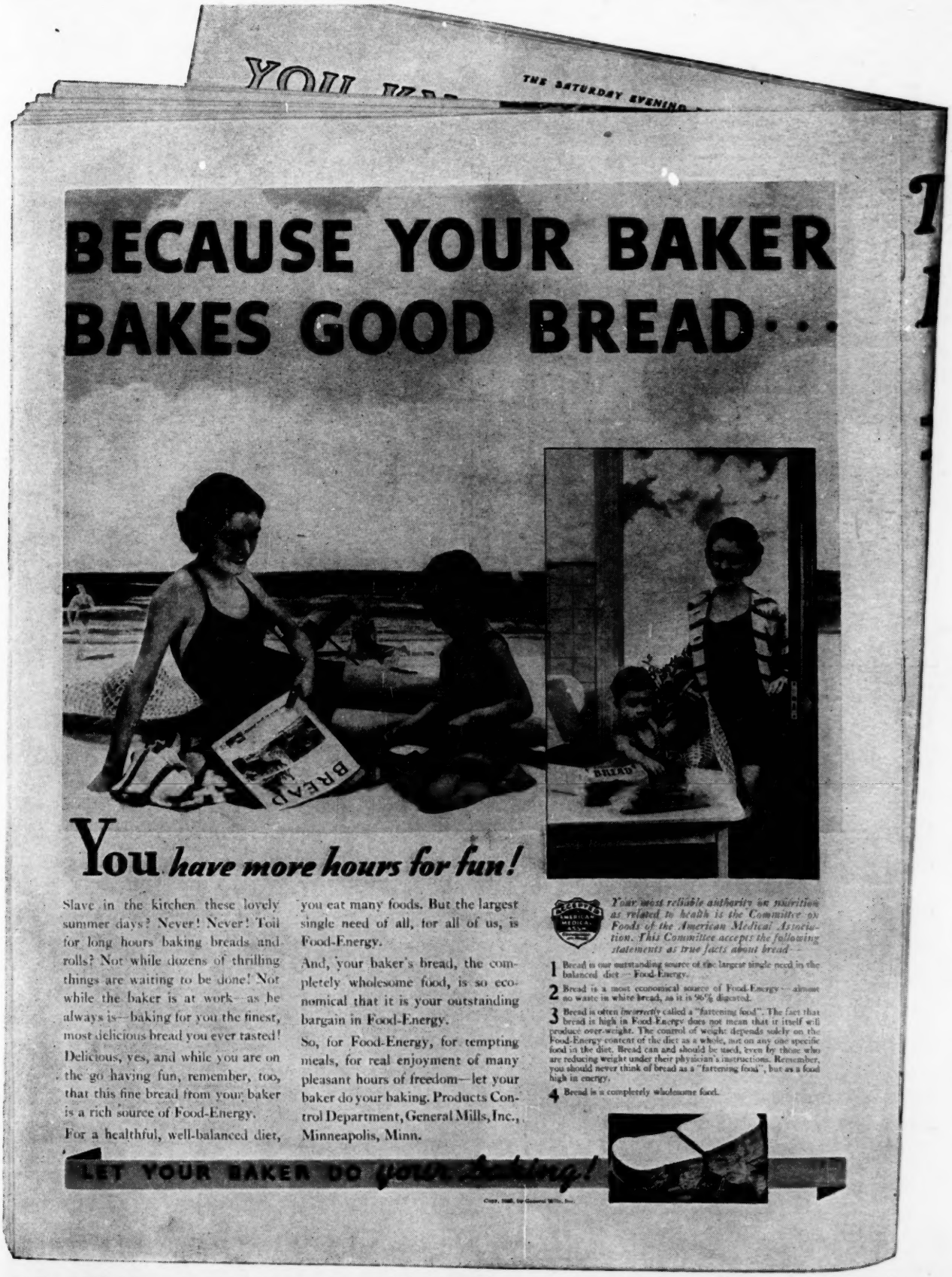
THE SATURDAY EVENING
BECAUSE YOUR BAKER BAKES GOOD BREAD···
BREAD
BREAD
You have more hours for fun!
Slave in the kitchen these lovely summer days? Never! Never! Toil for long hours baking breads and rolls? Not while dozens of thrilling things are waiting to be done! Not while the baker is at work—as he always is—baking for you the finest, most delicious bread you ever tasted!
Delicious, yes, and while you are on the go having fun, remember, too, that this fine bread from your baker is a rich source of Food-Energy.
For a healthful, well-balanced diet, you eat many foods. But the largest single need of all, for all of us, is Food-Energy.
And, your baker's bread, the completely wholesome food, is so economical that it is your outstanding bargain in Food-Energy.
So, for Food-Energy, for tempting meals, for real enjoyment of many pleasant hours of freedom—let your baker do your baking. Products Control Department, General Mills, Inc., Minneapolis, Minn.
Your most reliable authority on nutrition as related to health is the Committee on Foods of the American Medical Association. This Committee accepts the following statements as true facts about bread—
1 Bread is our outstanding source of the largest single need in the balanced diet—Food-Energy.
2 Bread is a most economical source of Food-Energy—almost no waste in white bread, as it is 96% digested.
3 Bread is often incorrectly called a "fattening food". The fact that bread is high in Food-Energy does not mean that it itself will produce over-weight. The control of weight depends solely on the Food-Energy content of the diet as a whole, not on any one specific food in the diet. Bread can and should be used, even by those who are reducing weight under their physician's instructions. Remember, you should never think of bread as a "fattening food", but as a food high in energy.
4 Bread is a completely wholesome food.
LET YOUR BAKER DO your baking!

General Mills, Inc., considers the acceptance of the Committee on Foods of the American Medical Association of first importance in preparing its advertising copy. Every effort is made to cooperate with this committee in presenting only true facts about baked wheat foods in current consumer-educational advertising sponsored by General Mills. The advertisement reproduced above, one of a series running on the back covers of The Saturday Evening Post, is a typical case in point.

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Gastric Tissue Juice Extract
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Proves of special service in the treatment of pus cases

ENZYMOL resolves necrotic tissue, exerts a reparative action, dissipates foul odors; a physiological, enzymic surface action. It does not invade healthy tissue; does not damage the skin.

It is made ready for use, simply by the addition of water.

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Abscess cavities	Diabetic gangrene
Antrum operation	After removal of tonsils
Sinus cases	After tooth extraction
Corneal ulcer	Cleansing mastoid
Carbuncle	Middle ear
Rectal fistula	Cervicitis

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Loose Stools in Infants

require extra diapering and inconvenience the mother

Clinically, loose stools are accompanied by a dehydration which, when excessive or long continued, interferes with the baby's normal gain. A long-continued depletion of water is serious, since "the fluid requirements of an infant are tremendous. A normal infant 15 pounds in weight will frequently excrete as much as one litre of urine per day. A negative water balance for more than a very short period is incompatible with life (Brown and Tisdall)."

Moreover, when the condition is superimposed by chance infection, the delicate balance may be seriously upset, since the infant's reserves have already been drawn upon, so that resistance to infection and dangerous forms of diarrhea may be too low for safety. Every physician dreads diarrhea, which Holt and McIntosh call "the commonest ailment of infants in the summer months."

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